

Notes for Marking Level E Worksheets

Marking is the process of clearly indicating correct pages, and incorrect or incomplete answers.

Place a **tick** (✓) on the question number of any incorrect, or unattempted question.

Place a **triangle** (△) on the question number for any question that has been attempted, but is incomplete.

| | | | | | | | |
|---|---|------|--|--|-----|-----------------|------|
| <p>E 1–200 (when reduction is the learning focus)</p> <p>Place a tick (✓) if students did not reduce fractions to the lowest possible term.</p> | <p>E 10a</p> <p>(✓) $\frac{18}{24} = \frac{6}{8}$</p> | | | | | | |
| <p>E 11–200 (when the focus for learning is not reduction)</p> <p>Place a triangle (△) if students did not reduce fractions to the lowest possible term.</p> | <p>E 21a</p> <p>(△) $\frac{7}{8} + \frac{7}{8} = \frac{14}{8} = 1\frac{6}{8}$</p> | | | | | | |
| <p>E 31–140, 181–200</p> <p>Students should use the Least Common Multiple (LCM) for addition and subtraction. Place a triangle (△) if students did not use the LCM.</p> <p>The LCM is indicated in brackets in the Answer Book for E 43–100 and 103–140.</p> | <p>E 47a</p> <p>(△) $\frac{1}{4} + \frac{5}{6} = \frac{6}{24} + \frac{20}{24} = \frac{26}{24} = 1\frac{2}{24} = 1\frac{1}{12}$</p> <table border="1"><tr><td colspan="3">47</td></tr><tr><td>(1)</td><td>$1\frac{1}{12}$</td><td>(12)</td></tr></table> | 47 | | | (1) | $1\frac{1}{12}$ | (12) |
| 47 | | | | | | | |
| (1) | $1\frac{1}{12}$ | (12) | | | | | |
| <p>E 141–200</p> <p>Fractions should be reduced in the intermediate step for multiplication and division. Place a triangle (△) if students did not reduce the fractions in the intermediate step.</p> | <p>E 143a</p> <p>(△) $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$</p> | | | | | | |

E1-5 (2-3 min)

| 1 | 2 | 3 | | | |
|----------|---|------------|---|---|----------|
| (1) 40 | (1) 492 | (1) 1075 | | | |
| (2) 45 | (2) 2070 | | | | |
| (3) 50 | (3) 4536 | (2) 2021 | | | |
| (4) 36 | | | | | |
| (5) 84 | (4) 1224 | (3) 1508 | | | |
| (6) 30 | (5) 1636 | (4) 2072 | | | |
| (7) 72 | (6) 4720 | | | | |
| (8) 100 | (7) 6300 | (5) 3481 | | | |
| (9) 200 | | | | | |
| (10) 250 | (8) 4860 | (6) 2730 | | | |
| 1 | 2 | 3 | | | |
| (11) 36 | (9) <table border="1"><tr><td>8</td><td>8</td><td>4</td></tr></table> | 8 | 8 | 4 | (7) 3240 |
| 8 | 8 | 4 | | | |
| (12) 92 | | | | | |
| (13) 170 | (10) 2040 | (8) 2400 | | | |
| (14) 270 | | | | | |
| (15) 392 | (11) 1953 | (9) 4800 | | | |
| (16) 536 | (12) 1672 | (10) 12168 | | | |
| (17) 702 | | | | | |
| (18) 144 | (13) 3366 | (11) 10525 | | | |
| (19) 245 | | | | | |
| (20) 368 | (14) 3658 | (12) 22952 | | | |

| 4 | | 5 | |
|------|--------------|------|-------------------------|
| (1) | 3 | (1) | $\boxed{8} R \boxed{1}$ |
| (2) | 4 | (2) | 9 R 3 |
| (3) | 4 R 2 | (3) | 13 R 2 |
| (4) | 5 | (4) | 10 R 1 |
| (5) | 5 R 6 | (5) | 12 R 2 |
| (6) | 10 | (6) | $\boxed{47}$ |
| (7) | 12 | (7) | 46 |
| (8) | 19 | (8) | 47 |
| (9) | 12 R 4 | (9) | 57 |
| (10) | 7 | (10) | 84 R 2 |
| 4 | | 5 | |
| (11) | $\boxed{9}$ | (11) | $\boxed{436}$ |
| (12) | 8 | (12) | 245 |
| (13) | 9 | (13) | 143 |
| (14) | $\boxed{12}$ | (14) | 136 R 3 |
| (15) | 21 | (15) | 120 R 2 |
| (16) | 10 | (16) | 681 |
| (17) | 15 | (17) | 570 |
| (18) | 14 | (18) | 469 R 4 |
| (19) | 24 | (19) | 1007 |
| (20) | 23 | (20) | 1590 |

E6-10 (2-3 min)

| 6 | 7 | 8 |
|--------------|---------------|--------------|
| (1) 4 R 2 | (1) 2 R 4 | (1) 34 R 4 |
| (2) 4 R 5 | (2) 3 R 48 | (2) 56 R 2 |
| (3) 3 R 7 | (3) 5 R 25 | |
| (4) 3 R 27 | (4) 4 R 6 | |
| (5) 2 R 2 | (5) 3 R 39 | (3) 6 R |
| (6) 2 R 6 | (6) 5 R 60 | (4) 57 R 36 |
| (7) 2 R 6 | (7) 2 R 22 | |
| (8) 3 R 34 | (8) 4 R 40 | |
| 6 | 7 | 8 |
| (9) 2 R 4 | (9) 2 2 R 3 | (5) 2 R 2 |
| (10) 3 R 3 | (10) 25 R 0 | (6) 23 R 5 |
| (11) 4 R 5 | | |
| (12) 4 R 42 | | |
| (13) 2 R 5 | (11) 4 R 27 | (7) 2 R 7 |
| (14) 3 R 32 | (12) 52 R 4 | (8) 23 R 2 |
| (15) 4 R 2 | | |
| (16) 5 R 32 | | |

| 9 | | | | 10 | | | |
|-----|------------------------|------|-----------------------|------|----------------|------|---------------|
| 1. | | | | | | | |
| (1) | $2\frac{\boxed{1}}{3}$ | (7) | $3\frac{5}{6}$ | (1) | $\frac{3}{4}$ | (8) | $\frac{2}{3}$ |
| (2) | $4\frac{2}{3}$ | (8) | 3 | (2) | $\frac{3}{7}$ | (9) | $\frac{3}{4}$ |
| (3) | $3\frac{3}{4}$ | (9) | $3\frac{7}{8}$ | (3) | $\frac{4}{5}$ | (10) | $\frac{2}{5}$ |
| (4) | $\boxed{4}$ | (10) | $4\frac{2}{9}$ | (4) | $\frac{3}{4}$ | (11) | $\frac{3}{4}$ |
| (5) | $1\frac{2}{5}$ | (11) | $2\frac{3}{10}$ | (5) | $\frac{1}{17}$ | (12) | $\frac{2}{5}$ |
| (6) | $2\frac{1}{5}$ | (12) | $2\frac{11}{15}$ | (6) | $\frac{1}{12}$ | (13) | $\frac{4}{5}$ |
| 9 | | | | 10 | | | |
| 2. | | 3. | | | | | |
| (1) | $1\frac{3}{4}$ | (1) | $\frac{\boxed{7}}{4}$ | (15) | $\frac{1}{2}$ | (22) | $\frac{2}{3}$ |
| (2) | $2\frac{4}{5}$ | (2) | $\frac{14}{5}$ | (16) | $\frac{1}{3}$ | (23) | $\frac{1}{3}$ |
| (3) | $4\frac{1}{6}$ | (3) | $\frac{19}{6}$ | (17) | $\frac{1}{2}$ | (24) | $\frac{1}{2}$ |
| (4) | 4 | (4) | $\frac{26}{7}$ | (18) | $\frac{1}{4}$ | (25) | $\frac{1}{3}$ |
| (5) | $4\frac{1}{11}$ | (5) | $\frac{67}{15}$ | (19) | $\frac{3}{4}$ | (26) | $\frac{3}{4}$ |
| (6) | $5\frac{3}{20}$ | (6) | $\frac{101}{20}$ | (20) | $\frac{1}{4}$ | (27) | $\frac{1}{2}$ |
| (7) | $4\frac{1}{30}$ | (7) | $\frac{53}{25}$ | (21) | $\frac{1}{4}$ | (28) | $\frac{2}{3}$ |

E11-15 (2-3 min)

| 11 | | 12 | |
|-----|---------------|------|-----------------|
| (1) | $\frac{4}{5}$ | (6) | $\frac{6}{7}$ |
| (2) | $\frac{3}{5}$ | (7) | $\frac{5}{9}$ |
| (3) | $\frac{4}{5}$ | (8) | $\frac{7}{9}$ |
| (4) | $\frac{3}{7}$ | (9) | $\frac{5}{11}$ |
| (5) | $\frac{5}{7}$ | (10) | $\frac{10}{11}$ |

| 11 | | 12 | |
|------|---------------|------|------------------|
| (11) | $\frac{1}{1}$ | (9) | $3\frac{6}{7}$ |
| (12) | $\frac{1}{1}$ | (10) | $1\frac{4}{9}$ |
| (13) | $\frac{1}{1}$ | (11) | $\frac{1}{1}$ |
| (14) | $\frac{6}{7}$ | (12) | $4\frac{8}{11}$ |
| (15) | $\frac{1}{1}$ | (13) | $\frac{1}{1}$ |
| | | (14) | $6\frac{9}{13}$ |
| | | (15) | $3\frac{8}{15}$ |
| | | (16) | $\frac{14}{17}$ |
| | | (17) | $5\frac{15}{19}$ |

| 13 | 14 | 15 |
|----------------------|-----------------------|----------------------|
| (1) $1\frac{1}{5}$ | (1) $3\frac{1}{5}$ | (1) $1\frac{4}{5}$ |
| (2) $1\frac{2}{5}$ | (2) $3\frac{2}{5}$ | (2) $2\frac{6}{7}$ |
| (3) $1\frac{3}{7}$ | (3) $3\frac{2}{7}$ | (3) $5\frac{4}{7}$ |
| (4) $1\frac{5}{7}$ | (4) $4\frac{4}{7}$ | (4) $1\frac{1}{9}$ |
| (5) 1 | (5) $4\frac{1}{7}$ | (5) $4\frac{2}{9}$ |
| (6) $1\frac{4}{9}$ | (6) $4\frac{1}{9}$ | (6) $1\frac{5}{11}$ |
| (7) $1\frac{5}{11}$ | (7) $5\frac{1}{9}$ | (7) $3\frac{3}{11}$ |
| (8) $1\frac{4}{13}$ | (8) $5\frac{2}{11}$ | (8) $3\frac{8}{13}$ |
| (9) $1\frac{2}{7}$ | (9) $6\frac{1}{9}$ | (10) 1 |
| (10) $1\frac{2}{9}$ | (10) $6\frac{5}{9}$ | (11) 2 |
| (11) 1 | (11) $7\frac{3}{11}$ | (12) 3 |
| (12) $1\frac{2}{13}$ | (12) $7\frac{2}{11}$ | (13) 4 |
| (13) $1\frac{1}{15}$ | (13) $3\frac{7}{13}$ | (14) $5\frac{1}{11}$ |
| (14) $1\frac{3}{17}$ | (14) $5\frac{2}{13}$ | (15) 3 |
| (15) $\frac{10}{19}$ | (15) $3\frac{13}{15}$ | (16) $5\frac{4}{15}$ |
| (16) $1\frac{2}{21}$ | (16) $6\frac{4}{15}$ | (17) 4 |
| (17) $1\frac{2}{23}$ | (17) $8\frac{4}{17}$ | (18) $6\frac{1}{25}$ |

E16–20 (2–3 min)

| 16 | 17 | 18 |
|----------------------|-----------------------|----------------------|
| (1) $4\frac{4}{5}$ | (1) $4\frac{1}{5}$ | (1) $1\frac{5}{7}$ |
| (2) $5\frac{6}{7}$ | (2) $6\frac{2}{7}$ | (2) 3 |
| (3) $4\frac{5}{7}$ | (3) $4\frac{4}{9}$ | (3) $3\frac{1}{9}$ |
| (4) $6\frac{7}{9}$ | (4) $3\frac{1}{11}$ | (4) $4\frac{2}{9}$ |
| (5) $4\frac{2}{9}$ | (5) $5\frac{2}{11}$ | (5) $5\frac{2}{11}$ |
| (6) $2\frac{10}{11}$ | (6) $7\frac{1}{13}$ | (6) $4\frac{6}{11}$ |
| (7) $5\frac{10}{11}$ | (7) 6 | (7) $4\frac{9}{13}$ |
| (8) $4\frac{4}{11}$ | (8) $7\frac{2}{15}$ | (8) $5\frac{6}{13}$ |
| (9) $4\frac{1}{5}$ | (9) $5\frac{4}{9}$ | (10) $4\frac{3}{4}$ |
| (10) $5\frac{2}{5}$ | (10) $6\frac{2}{11}$ | (11) $4\frac{1}{5}$ |
| (11) $5\frac{2}{7}$ | (11) $6\frac{1}{13}$ | (12) $2\frac{5}{6}$ |
| (12) $4\frac{4}{7}$ | (12) $3\frac{3}{13}$ | (13) $4\frac{2}{7}$ |
| (13) 3 | (13) 4 | (14) $3\frac{5}{9}$ |
| (14) $6\frac{1}{9}$ | (14) $7\frac{4}{15}$ | (15) $4\frac{7}{11}$ |
| (15) $5\frac{1}{11}$ | (15) $4\frac{12}{17}$ | (16) $2\frac{8}{13}$ |
| (16) $6\frac{2}{11}$ | (16) $7\frac{2}{17}$ | (17) $5\frac{4}{15}$ |
| | (17) $7\frac{2}{19}$ | |

| 19 | | 20 | |
|------|------------------|------|------------------|
| (1) | $4\frac{4}{5}$ | (1) | $\frac{3}{5}$ |
| (2) | $2\frac{2}{5}$ | (2) | $3\frac{6}{7}$ |
| (3) | 3 | (3) | $3\frac{7}{9}$ |
| (4) | $5\frac{2}{9}$ | (4) | $5\frac{2}{11}$ |
| (5) | $4\frac{3}{11}$ | (5) | 4 |
| (6) | $5\frac{7}{11}$ | (6) | $6\frac{4}{15}$ |
| (7) | $5\frac{11}{13}$ | (7) | $5\frac{3}{17}$ |
| (8) | $6\frac{2}{17}$ | (8) | $5\frac{1}{19}$ |
| (9) | | (9) | $5\frac{5}{21}$ |
| 19 | | 20 | |
| (9) | $4\frac{4}{7}$ | (10) | $5\frac{4}{9}$ |
| (10) | $5\frac{2}{9}$ | (11) | $4\frac{6}{11}$ |
| (11) | $3\frac{8}{11}$ | (12) | $6\frac{5}{17}$ |
| (12) | $4\frac{3}{11}$ | (13) | $5\frac{3}{19}$ |
| (13) | $5\frac{2}{13}$ | (14) | $9\frac{19}{21}$ |
| (14) | 4 | (15) | $7\frac{2}{23}$ |
| (15) | $5\frac{8}{15}$ | (16) | 5 |
| (16) | $5\frac{4}{17}$ | (17) | $9\frac{2}{27}$ |
| (17) | $8\frac{10}{19}$ | (18) | $5\frac{20}{29}$ |

E21-30 (3-4 min)

| 21 | 22 | 23 | 24 | 25 |
|----------------------------|----------------------|------------------------------------|-----------------------|----------------------|
| (1) $1\frac{\boxed{2}}{3}$ | (1) $1\frac{1}{3}$ | (1) $3\frac{\boxed{2}}{\boxed{3}}$ | (1) $4\frac{1}{3}$ | (1) $1\frac{4}{9}$ |
| (2) $1\frac{1}{4}$ | (2) $1\frac{5}{9}$ | (2) $3\frac{1}{4}$ | (2) 5 | (2) $3\frac{4}{11}$ |
| (3) $1\frac{3}{4}$ | (3) $1\frac{1}{11}$ | (3) $4\frac{1}{2}$ | (3) $2\frac{7}{11}$ | (3) $4\frac{1}{2}$ |
| (4) $1\frac{1}{3}$ | (4) $1\frac{5}{11}$ | (4) 4 | (4) $3\frac{2}{11}$ | (4) $3\frac{2}{7}$ |
| (5) $1\frac{2}{3}$ | (5) $1\frac{1}{6}$ | (5) $5\frac{2}{3}$ | (5) $4\frac{1}{3}$ | (5) $4\frac{13}{15}$ |
| (6) $1\frac{1}{5}$ | (6) $1\frac{1}{2}$ | (6) $5\frac{3}{5}$ | (6) $5\frac{7}{13}$ | (6) $\frac{1}{8}$ |
| (7) 1 | (7) $\frac{9}{13}$ | (7) $6\frac{1}{11}$ | (7) $5\frac{4}{15}$ | (7) $\frac{5}{9}$ |
| 21 | 22 | 23 | 24 | 25 |
| (8) $1\frac{1}{3}$ | (8) 1 | (8) $3\frac{1}{2}$ | (8) $3\frac{2}{5}$ | (8) $3\frac{1}{3}$ |
| (9) $1\frac{2}{9}$ | (9) $1\frac{3}{5}$ | (9) $5\frac{1}{4}$ | (9) 6 | (9) 1 |
| (10) $1\frac{1}{5}$ | (10) $1\frac{1}{3}$ | (10) $5\frac{1}{3}$ | (10) $4\frac{10}{11}$ | (10) $1\frac{1}{7}$ |
| (11) $1\frac{3}{5}$ | (11) 1 | (11) $6\frac{1}{9}$ | (11) $4\frac{4}{11}$ | (11) $4\frac{4}{15}$ |
| (12) $1\frac{1}{3}$ | (12) $1\frac{1}{13}$ | (12) $4\frac{3}{5}$ | (12) $6\frac{1}{2}$ | (12) 4 |
| (13) $1\frac{5}{13}$ | (13) $1\frac{1}{7}$ | (13) 4 | (13) $4\frac{11}{13}$ | (13) $\frac{1}{3}$ |
| (14) $\frac{12}{13}$ | (14) $1\frac{2}{7}$ | (14) $3\frac{9}{11}$ | (14) $\frac{1}{5}$ | (14) $1\frac{1}{3}$ |
| | (15) $\frac{11}{15}$ | (15) $3\frac{5}{13}$ | (15) $\frac{2}{3}$ | (15) $5\frac{1}{2}$ |

| 26 | 27 | 28 | 29 | 30 |
|---------------------|----------------------|----------------------|----------------------|-----------------------|
| (1) $4\frac{2}{3}$ | (1) $5\frac{4}{7}$ | (1) $5\frac{1}{3}$ | (1) $6\frac{1}{2}$ | (1) 8 |
| (2) $4\frac{1}{4}$ | (2) $3\frac{1}{2}$ | (2) $5\frac{1}{9}$ | (2) $\frac{2}{3}$ | (2) $3\frac{3}{4}$ |
| (3) $4\frac{1}{2}$ | (3) $5\frac{1}{4}$ | (3) $4\frac{1}{5}$ | (3) 4 | (3) $2\frac{1}{5}$ |
| (4) 5 | (4) $6\frac{2}{3}$ | (4) 5 | (4) $4\frac{1}{11}$ | (4) $3\frac{8}{11}$ |
| (5) $5\frac{1}{3}$ | (5) 1 | (5) $2\frac{2}{11}$ | (5) $\frac{2}{3}$ | (5) $5\frac{10}{13}$ |
| (6) $6\frac{2}{3}$ | (6) $\frac{3}{5}$ | (6) $4\frac{1}{2}$ | (6) $4\frac{6}{13}$ | (6) $\frac{4}{5}$ |
| (7) $6\frac{5}{9}$ | (7) $\frac{4}{5}$ | (7) $\frac{1}{2}$ | (7) $4\frac{1}{7}$ | (7) $2\frac{2}{3}$ |
| | (8) 5 | (8) $3\frac{6}{7}$ | (8) $6\frac{1}{3}$ | (8) $5\frac{3}{10}$ |
| 26 | 27 | 28 | 29 | 30 |
| (8) $3\frac{1}{2}$ | (9) $5\frac{1}{6}$ | (9) $3\frac{2}{13}$ | (9) $3\frac{1}{4}$ | (9) $2\frac{1}{3}$ |
| (9) $4\frac{3}{4}$ | (10) 2 | (10) $2\frac{1}{13}$ | (10) $\frac{5}{8}$ | (10) $1\frac{5}{11}$ |
| (10) $4\frac{1}{3}$ | (11) $6\frac{1}{13}$ | (11) 5 | (11) 4 | (11) $5\frac{19}{23}$ |
| (11) $4\frac{2}{3}$ | (12) $1\frac{9}{13}$ | (12) $6\frac{1}{7}$ | (12) $5\frac{1}{17}$ | (12) $7\frac{1}{2}$ |
| (12) $6\frac{1}{5}$ | (13) $4\frac{1}{7}$ | (13) $\frac{2}{5}$ | (13) $5\frac{1}{9}$ | (13) $3\frac{23}{25}$ |
| (13) $5\frac{3}{5}$ | (14) $6\frac{3}{7}$ | (14) $2\frac{1}{5}$ | (14) $5\frac{1}{3}$ | (14) $4\frac{1}{2}$ |
| (14) $\frac{1}{2}$ | (15) $\frac{3}{5}$ | (15) $5\frac{1}{8}$ | (15) $3\frac{6}{19}$ | (15) 5 |
| (15) $\frac{5}{6}$ | (16) $\frac{4}{5}$ | (16) $5\frac{1}{2}$ | (16) $7\frac{1}{5}$ | (16) $8\frac{2}{3}$ |

E31-35 (3-4 min)

In E31-40, the LCM is fixed on each side. If students have difficulty finding the denominators, have them refer to the hints in the intermediate steps.

| 31 | | | | 32 | |
|-----|------------------------|------|-----------------|------|---------------|
| 1. | | | | | |
| (1) | $\frac{2}{8}$ | (8) | $\frac{6}{8}$ | (1) | $\frac{3}{8}$ |
| (2) | $\frac{3}{9}$ | (9) | $\frac{2}{12}$ | (2) | $\frac{5}{8}$ |
| (3) | $\frac{6}{9}$ | (10) | $\frac{8}{12}$ | (3) | $\frac{7}{8}$ |
| (4) | $\frac{3}{12}$ | (11) | $\frac{10}{15}$ | (4) | $\frac{7}{8}$ |
| (5) | $\frac{9}{12}$ | (12) | $\frac{12}{15}$ | (5) | $\frac{5}{8}$ |
| (6) | $\frac{6}{14}$ | (13) | $\frac{3}{18}$ | (6) | $\frac{7}{8}$ |
| (7) | $\frac{7}{14}$ | (14) | $\frac{10}{18}$ | | |
| 31 | | | | 32 | |
| 2. | | | | | |
| (1) | $\frac{\boxed{4}}{10}$ | | | (7) | $\frac{4}{9}$ |
| | $\frac{7}{10}$ | | | (8) | $\frac{8}{9}$ |
| (2) | $\frac{\boxed{8}}{10}$ | | | (9) | $\frac{7}{9}$ |
| | $\frac{9}{10}$ | | | (10) | $\frac{8}{9}$ |
| (3) | $\frac{2}{10}$ | | | (11) | $\frac{7}{9}$ |
| | $\frac{9}{10}$ | | | (12) | $\frac{5}{9}$ |

*35b (12) Problem with a common denominator

| 33 | 34 | 35 |
|----------------------|---------------------------|----------------------|
| (1) $\frac{7}{10}$ | 1. (1) $\frac{5}{12}$ | (1) $\frac{5}{14}$ |
| (2) $\frac{9}{10}$ | (2) $\frac{11}{12}$ | (2) $\frac{13}{14}$ |
| (3) $\frac{9}{10}$ | (3) $\frac{5}{12}$ | (3) $\frac{4}{7}$ |
| (4) $\frac{3}{10}$ | (4) $\frac{11}{12}$ | (4) $\frac{1}{2}$ |
| (5) $\frac{9}{10}$ | (5) $\frac{7}{12}$ | (5) $1\frac{3}{14}$ |
| (6) $\frac{3}{4}$ | 2. (1) $1\frac{1}{15}$ | (7) $\frac{5}{18}$ |
| (7) $\frac{5}{6}$ | (2) $1\frac{2}{15}$ | (8) $\frac{13}{18}$ |
| (8) $\frac{3}{4}$ | (3) $\frac{14}{15}$ | (9) $\frac{2}{9}$ |
| (9) $\frac{5}{12}$ | (4) $1\frac{1}{15}$ | (10) $\frac{8}{9}$ |
| (10) $\frac{2}{3}$ | (5) $\frac{11}{15}$ | (11) $1\frac{1}{18}$ |
| (11) $\frac{11}{12}$ | (6) $\frac{4}{5}$ | (12)* $\frac{2}{3}$ |

E36-40 (3-4 min)

In E31-40, the LCM is fixed on each side. If students have difficulty finding the denominators, have them refer to the hints in the intermediate steps.

| 36 | | 37 | | 38 | |
|------|----------------|------|-----------------|------|-----------------|
| (1) | $\frac{3}{8}$ | (1) | $\frac{1}{2}$ | (1) | $\frac{9}{14}$ |
| (2) | $\frac{7}{8}$ | (2) | $\frac{7}{10}$ | (2) | $\frac{1}{2}$ |
| (3) | $\frac{5}{8}$ | (3) | $1\frac{1}{10}$ | (3) | $\frac{6}{7}$ |
| (4) | $1\frac{3}{8}$ | (4) | $\frac{3}{5}$ | (4) | $\frac{5}{7}$ |
| (5) | $\frac{7}{8}$ | (5) | $\frac{4}{5}$ | (5) | $\frac{13}{14}$ |
| (6) | $1\frac{1}{8}$ | (6) | $1\frac{3}{10}$ | (6) | $1\frac{3}{14}$ |
| 36 | | 37 | | 38 | |
| (7) | $\frac{4}{9}$ | (7) | $\frac{7}{12}$ | (7) | $\frac{13}{15}$ |
| (8) | $\frac{5}{9}$ | (8) | $1\frac{5}{12}$ | (8) | $\frac{2}{3}$ |
| (9) | $\frac{8}{9}$ | (9) | $\frac{1}{3}$ | (9) | $\frac{4}{5}$ |
| (10) | $1\frac{1}{9}$ | (10) | $\frac{3}{4}$ | (10) | $1\frac{2}{15}$ |
| (11) | $\frac{7}{9}$ | (11) | $\frac{11}{12}$ | (11) | $\frac{13}{15}$ |
| (12) | $1\frac{1}{9}$ | (12) | $1\frac{7}{12}$ | (12) | $1\frac{2}{15}$ |
| (13) | $1\frac{2}{9}$ | (13) | $\frac{11}{12}$ | (13) | $\frac{14}{15}$ |

In E31-40, the LCM is fixed on each side. If students have difficulty finding the denominators, have them refer to the hints in the intermediate steps.

E36-40

| 39 | | 40 | |
|------|-----------------|------|-----------------|
| (1) | $\frac{9}{16}$ | (1) | $\frac{3}{20}$ |
| (2) | $\frac{13}{16}$ | (2) | $\frac{3}{4}$ |
| (3) | $1\frac{1}{16}$ | (3) | $\frac{2}{5}$ |
| (4) | $1\frac{3}{16}$ | (4) | $1\frac{1}{20}$ |
| (5) | $\frac{11}{16}$ | (5) | $1\frac{3}{20}$ |
| (6) | $1\frac{3}{16}$ | (6) | $\frac{4}{5}$ |
| 39 | | 40 | |
| (7) | $\frac{1}{2}$ | (7) | $\frac{1}{8}$ |
| (8) | $\frac{11}{18}$ | (8) | $\frac{5}{6}$ |
| (9) | $\frac{5}{9}$ | (9) | $\frac{11}{24}$ |
| (10) | $\frac{8}{9}$ | (10) | $1\frac{1}{24}$ |
| (11) | $\frac{13}{18}$ | (11) | $\frac{5}{24}$ |
| (12) | $1\frac{1}{18}$ | (12) | $\frac{13}{24}$ |
| (13) | $\frac{8}{9}$ | (13) | $\frac{3}{4}$ |

E41-45 (3-4 min)

| 41 | 42 |
|--|--|
| <p>1.</p> <p>(1) $\boxed{15} \boxed{18} \boxed{21} \boxed{24} \boxed{27} \boxed{30} \boxed{33} \boxed{36}$</p> <p>(2) $\boxed{16} \boxed{20} \boxed{24} \boxed{28} \boxed{32} \boxed{36}$</p> <p>(3) 24, 36</p> <p>2.</p> <p>(1) $\boxed{12} \boxed{18} \boxed{24} \boxed{30} \boxed{36} \boxed{42} \boxed{48} \boxed{54} \boxed{60} \boxed{66} \boxed{72}$</p> <p>(2) $\boxed{16} \boxed{24} \boxed{32} \boxed{40} \boxed{48} \boxed{56} \boxed{64} \boxed{72}$</p> <p>(3) 24, 48</p> | <p>1.</p> <p>(1) 24</p> <p>(2) 18</p> <p>(3) 20</p> <p>(4) 30</p> <p>(5) 24</p> <p>(6) 28</p> <p>(7) 30</p> |
| 41 | 42 |
| <p>3.</p> <p>(1) $\boxed{18} \boxed{24} \boxed{30} \boxed{36} \boxed{42} \boxed{48} \boxed{54} \boxed{60}$</p> <p>(2) $\boxed{27} \boxed{36} \boxed{45} \boxed{54} \boxed{63}$</p> <p>(3) 18, 36, 54</p> <p>(4) 18</p> <p>4.</p> <p>(1) 12</p> <p>(2) 12</p> <p>(3) 24</p> <p>(4) 20</p> | <p>2.</p> <p>(1) $\boxed{24}$</p> <p>$\frac{7}{24}$</p> <p>(2) $\boxed{18}$</p> <p>$\frac{11}{18}$</p> <p>(3) $\boxed{20}$</p> <p>$1\frac{9}{20}$</p> <p>(4) $\boxed{10}$</p> <p>$\frac{1}{2}$</p> |

(Check if students use the LCM
indicated in the brackets below.)

E41-45

| 43 | | | 44 | | | 45 | | |
|-----|-----------------|------|-----|-----------------|------|-----|-----------------|------|
| 1. | | | 1. | | | 1. | | |
| (1) | 12 | | (1) | 30 | | (1) | 40 | |
| (2) | 24 | | (2) | 40 | | (2) | 60 | |
| (3) | 18 | | (3) | 24 | | (3) | 42 | |
| (4) | 20 | | (4) | 36 | | (4) | 30 | |
| (5) | 36 | | (5) | 28 | | (5) | 30 | |
| (6) | 60 | | (6) | 42 | | (6) | 36 | |
| (7) | 45 | | (7) | 45 | | (7) | 18 | |
| (8) | 30 | | (8) | 36 | | (8) | 20 | |
| 43 | | | 44 | | | 45 | | |
| 2. | | | 2. | | | 2. | | |
| (1) | $\frac{5}{6}$ | (6) | (1) | $1\frac{1}{12}$ | (12) | (1) | $\frac{19}{24}$ | (24) |
| (2) | $\frac{11}{12}$ | (12) | (2) | $\frac{13}{24}$ | (24) | (2) | $\frac{11}{20}$ | (20) |
| (3) | $\frac{23}{24}$ | (24) | (3) | $\frac{4}{15}$ | (30) | (3) | $\frac{9}{40}$ | (40) |
| (4) | $1\frac{5}{24}$ | (24) | (4) | $\frac{13}{15}$ | (30) | (4) | $\frac{27}{40}$ | (40) |
| (5) | $\frac{5}{18}$ | (18) | (5) | $\frac{5}{24}$ | (24) | (5) | $\frac{9}{28}$ | (28) |
| (6) | $\frac{17}{18}$ | (18) | (6) | $\frac{11}{24}$ | (24) | (6) | $1\frac{3}{28}$ | (28) |
| (7) | $\frac{7}{20}$ | (20) | (7) | $\frac{7}{36}$ | (36) | (7) | $\frac{7}{30}$ | (30) |
| (8) | $1\frac{1}{20}$ | (20) | (8) | $1\frac{1}{36}$ | (36) | (8) | $\frac{9}{10}$ | (30) |

E46-50 (3-4 min)

[Check if students use the LCM indicated in the brackets below.]

| 46 | | 47 | | 48 | |
|----------------------|------|----------------------|------|----------------------|------|
| (1) $\frac{5}{12}$ | (12) | (1) $1\frac{1}{12}$ | (12) | (1) $\frac{23}{24}$ | (24) |
| (2) $\frac{11}{12}$ | (12) | (2) $\frac{13}{24}$ | (24) | (2) $1\frac{1}{18}$ | (18) |
| (3) $\frac{7}{24}$ | (24) | (3) $\frac{7}{18}$ | (18) | (3) $\frac{17}{20}$ | (20) |
| (4) $1\frac{1}{24}$ | (24) | (4) $1\frac{5}{18}$ | (18) | (4) $1\frac{3}{20}$ | (20) |
| (5) $\frac{5}{18}$ | (18) | (5) $\frac{19}{40}$ | (40) | (5) $\frac{17}{24}$ | (24) |
| (6) $\frac{17}{18}$ | (18) | (6) $1\frac{1}{40}$ | (40) | (6) $\frac{23}{24}$ | (24) |
| 46 | | 47 | | 48 | |
| (7) $\frac{1}{2}$ | (10) | (7) $\frac{4}{15}$ | (30) | (7) $\frac{19}{36}$ | (36) |
| (8) $\frac{7}{10}$ | (10) | (8) $\frac{7}{15}$ | (30) | (8) $\frac{23}{36}$ | (36) |
| (9) $\frac{5}{24}$ | (24) | (9) $\frac{11}{36}$ | (36) | (9) $\frac{5}{21}$ | (42) |
| (10) $\frac{13}{24}$ | (24) | (10) $\frac{29}{36}$ | (36) | (10) $\frac{19}{21}$ | (42) |
| (11) $\frac{8}{45}$ | (45) | (11) $\frac{1}{6}$ | (30) | (11) $\frac{13}{30}$ | (30) |
| (12) $\frac{11}{45}$ | (45) | (12) $\frac{7}{30}$ | (30) | (12) $\frac{9}{10}$ | (30) |

| 49 | | | 50 | | |
|------|-----------------|------|------|-----------------|------|
| (1) | $1\frac{3}{20}$ | (20) | (1) | $\frac{9}{10}$ | (10) |
| (2) | $\frac{14}{15}$ | (30) | (2) | $1\frac{5}{36}$ | (36) |
| (3) | $\frac{17}{24}$ | (24) | (3) | $\frac{8}{21}$ | (42) |
| (4) | $1\frac{1}{24}$ | (24) | (4) | $\frac{11}{21}$ | (42) |
| (5) | $\frac{1}{2}$ | (14) | (5) | $\frac{11}{30}$ | (30) |
| (6) | $\frac{11}{14}$ | (14) | (6) | $\frac{5}{6}$ | (30) |
| 49 | | | 50 | | |
| (7) | $\frac{23}{60}$ | (60) | (7) | $1\frac{3}{28}$ | (28) |
| (8) | $\frac{31}{60}$ | (60) | (8) | $\frac{25}{28}$ | (28) |
| (9) | $\frac{13}{45}$ | (45) | (9) | $\frac{19}{36}$ | (36) |
| (10) | $\frac{22}{45}$ | (45) | (10) | $1\frac{5}{36}$ | (36) |
| (11) | $\frac{11}{36}$ | (36) | (11) | $\frac{1}{4}$ | (20) |
| (12) | $1\frac{1}{36}$ | (36) | (12) | $\frac{3}{4}$ | (20) |

E51-55 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 51 | | 52 | | 53 | |
|----------------------|------|----------------------|------|----------------------|------|
| (1) $\frac{5}{12}$ | (12) | (1) $1\frac{1}{12}$ | (12) | (1) $\frac{1}{2}$ | (6) |
| (2) $\frac{11}{12}$ | (12) | (2) $\frac{11}{14}$ | (14) | (2) $\frac{23}{40}$ | (40) |
| (3) $\frac{19}{24}$ | (24) | (3) $\frac{5}{8}$ | (8) | (3) $\frac{17}{36}$ | (36) |
| (4) $\frac{5}{9}$ | (9) | (4) $1\frac{1}{9}$ | (9) | (4) $1\frac{5}{18}$ | (18) |
| (5) $\frac{1}{2}$ | (10) | (5) $\frac{7}{20}$ | (20) | (5) $\frac{4}{5}$ | (10) |
| (6) $1\frac{1}{40}$ | (40) | (6) $\frac{5}{6}$ | (12) | (6) $\frac{11}{24}$ | (24) |
| 51 | | 52 | | 53 | |
| (7) $\frac{5}{6}$ | (6) | (7) $1\frac{5}{21}$ | (21) | (7) $1\frac{1}{6}$ | (6) |
| (8) $\frac{7}{10}$ | (10) | (8) $\frac{53}{56}$ | (56) | (8) $\frac{43}{45}$ | (45) |
| (9) $\frac{11}{12}$ | (12) | (9) $\frac{25}{36}$ | (36) | (9) $\frac{14}{15}$ | (30) |
| (10) $1\frac{1}{15}$ | (15) | (10) $\frac{19}{40}$ | (40) | (10) $\frac{25}{36}$ | (36) |
| (11) $1\frac{7}{20}$ | (20) | (11) $\frac{17}{24}$ | (24) | (11) $\frac{8}{21}$ | (42) |
| (12) $\frac{11}{30}$ | (30) | (12) $\frac{9}{28}$ | (28) | (12) $\frac{13}{30}$ | (30) |

| 54 | | | 55 | | |
|------|-----------------|------|------|-----------------|------|
| (1) | $\frac{13}{18}$ | (18) | (1) | $1\frac{7}{12}$ | (12) |
| (2) | $\frac{19}{28}$ | (28) | (2) | $1\frac{1}{8}$ | (8) |
| (3) | $1\frac{5}{24}$ | (24) | (3) | $\frac{32}{63}$ | (63) |
| (4) | $\frac{1}{2}$ | (10) | (4) | $1\frac{3}{40}$ | (40) |
| (5) | $1\frac{7}{40}$ | (40) | (5) | $\frac{31}{60}$ | (60) |
| (6) | $1\frac{1}{36}$ | (36) | (6) | $\frac{11}{35}$ | (70) |
| 54 | | | 55 | | |
| (7) | $\frac{7}{8}$ | (8) | (7) | $1\frac{7}{36}$ | (36) |
| (8) | $\frac{29}{36}$ | (36) | (8) | $\frac{17}{20}$ | (20) |
| (9) | $\frac{23}{60}$ | (60) | (9) | $1\frac{1}{24}$ | (24) |
| (10) | $\frac{1}{2}$ | (14) | (10) | $\frac{27}{28}$ | (28) |
| (11) | $\frac{11}{56}$ | (56) | (11) | $\frac{5}{6}$ | (30) |
| (12) | $\frac{13}{45}$ | (45) | (12) | $\frac{17}{48}$ | (48) |

E56-60 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 56 | | 57 | | 58 | |
|------|-----------------|------|------|-----------------|------|
| (1) | $\frac{13}{24}$ | (24) | (1) | $\frac{17}{18}$ | (18) |
| (2) | $1\frac{2}{45}$ | (45) | (2) | $\frac{35}{36}$ | (36) |
| (3) | $\frac{11}{20}$ | (20) | (3) | $\frac{3}{4}$ | (12) |
| (4) | $\frac{2}{3}$ | (12) | (4) | $1\frac{1}{24}$ | (24) |
| (5) | $\frac{43}{60}$ | (60) | (5) | $\frac{19}{56}$ | (56) |
| (6) | $\frac{5}{21}$ | (42) | (6) | $\frac{17}{45}$ | (45) |
| 56 | | 57 | | 58 | |
| (7) | $1\frac{1}{35}$ | (35) | (7) | $1\frac{7}{24}$ | (24) |
| (8) | $\frac{67}{72}$ | (72) | (8) | $\frac{1}{2}$ | (14) |
| (9) | $\frac{7}{15}$ | (30) | (9) | $\frac{23}{48}$ | (48) |
| (10) | $\frac{23}{36}$ | (36) | (10) | $1\frac{1}{16}$ | (16) |
| (11) | $\frac{9}{10}$ | (30) | (11) | $\frac{19}{36}$ | (36) |
| (12) | $\frac{5}{6}$ | (18) | (12) | $\frac{3}{4}$ | (20) |
| (7) | $1\frac{1}{18}$ | (18) | (7) | $1\frac{1}{18}$ | (18) |
| (8) | $\frac{11}{14}$ | (14) | (8) | $\frac{11}{14}$ | (14) |
| (9) | $\frac{5}{6}$ | (30) | (9) | $\frac{5}{6}$ | (30) |
| (10) | $\frac{5}{6}$ | (18) | (10) | $\frac{5}{6}$ | (18) |
| (11) | $1\frac{3}{20}$ | (20) | (11) | $1\frac{3}{20}$ | (20) |
| (12) | $\frac{3}{14}$ | (42) | (12) | $\frac{3}{14}$ | (42) |

[Check if students use the LCM
indicated in the brackets below.]

E56-60

| 59 | | | 60 | | |
|------|-----------------|------|------|-----------------|------|
| (1) | $1\frac{1}{40}$ | (40) | (1) | $\frac{13}{15}$ | (30) |
| (2) | $1\frac{1}{20}$ | (20) | (2) | $\frac{7}{12}$ | (12) |
| (3) | $\frac{3}{4}$ | (12) | (3) | $\frac{41}{60}$ | (60) |
| (4) | $\frac{19}{21}$ | (42) | (4) | $\frac{25}{56}$ | (56) |
| (5) | $\frac{2}{3}$ | (15) | (5) | $\frac{5}{6}$ | (30) |
| (6) | $1\frac{2}{45}$ | (45) | (6) | $\frac{13}{16}$ | (16) |
| 59 | | | 60 | | |
| (7) | $1\frac{5}{36}$ | (36) | (7) | $\frac{1}{2}$ | (18) |
| (8) | $\frac{9}{14}$ | (14) | (8) | $\frac{33}{40}$ | (40) |
| (9) | $1\frac{1}{48}$ | (48) | (9) | $1\frac{1}{20}$ | (20) |
| (10) | $\frac{29}{36}$ | (36) | (10) | $\frac{13}{33}$ | (66) |
| (11) | $\frac{53}{60}$ | (60) | (11) | $\frac{31}{72}$ | (72) |
| (12) | $\frac{29}{40}$ | (40) | (12) | $\frac{17}{50}$ | (50) |

E61-65 (3-5 min)

[Check if students use the LCM indicated in the brackets below.]

| 61 | | | 62 | | | 63 | | |
|------|-----------------|------|------|-----------------|------|------|-----------------|------|
| (1) | $\frac{11}{12}$ | (12) | (1) | $1\frac{1}{12}$ | (12) | (1) | $\frac{5}{6}$ | (6) |
| (2) | $1\frac{1}{12}$ | (12) | (2) | $\frac{13}{15}$ | (15) | (2) | $1\frac{1}{12}$ | (12) |
| (3) | $\frac{5}{6}$ | (12) | (3) | $\frac{20}{21}$ | (21) | (3) | $1\frac{4}{35}$ | (35) |
| (4) | $1\frac{1}{6}$ | (12) | (4) | $\frac{1}{2}$ | (10) | (4) | $\frac{17}{20}$ | (20) |
| (5) | $1\frac{1}{4}$ | (12) | (5) | $\frac{19}{24}$ | (24) | (5) | $\frac{23}{28}$ | (28) |
| (6) | $\frac{11}{12}$ | (12) | (6) | $1\frac{1}{3}$ | (15) | (6) | $1\frac{1}{5}$ | (15) |
| 61 | | | 62 | | | 63 | | |
| (7) | $\frac{11}{15}$ | (15) | (7) | $\frac{9}{10}$ | (10) | (7) | $1\frac{1}{28}$ | (28) |
| (8) | $\frac{4}{5}$ | (15) | (8) | $1\frac{1}{24}$ | (24) | (8) | $\frac{7}{15}$ | (30) |
| (9) | $\frac{13}{15}$ | (15) | (9) | $\frac{11}{20}$ | (20) | (9) | $1\frac{1}{36}$ | (36) |
| (10) | $1\frac{1}{15}$ | (15) | (10) | $\frac{31}{60}$ | (60) | (10) | $\frac{17}{30}$ | (30) |
| (11) | $\frac{13}{30}$ | (30) | (11) | $\frac{11}{21}$ | (42) | (11) | $\frac{29}{80}$ | (80) |
| (12) | $1\frac{1}{10}$ | (30) | (12) | $1\frac{1}{4}$ | (20) | (12) | $\frac{53}{60}$ | (60) |

| 64 | | | 65 | | |
|------|------------------|------|------|------------------|------|
| (1) | $1\frac{1}{24}$ | (24) | (1) | $\frac{23}{30}$ | (30) |
| (2) | $\frac{37}{45}$ | (45) | (2) | $1\frac{11}{24}$ | (24) |
| (3) | $\frac{31}{44}$ | (44) | (3) | $\frac{53}{60}$ | (60) |
| (4) | $\frac{1}{2}$ | (14) | (4) | $\frac{18}{35}$ | (70) |
| (5) | $1\frac{3}{10}$ | (30) | (5) | $\frac{16}{45}$ | (45) |
| (6) | $\frac{16}{45}$ | (90) | (6) | $\frac{11}{40}$ | (40) |
| 64 | | | 65 | | |
| (7) | $1\frac{11}{36}$ | (36) | (7) | $\frac{13}{15}$ | (30) |
| (8) | $\frac{23}{24}$ | (24) | (8) | $1\frac{7}{30}$ | (30) |
| (9) | $\frac{8}{21}$ | (42) | (9) | $\frac{43}{48}$ | (48) |
| (10) | $\frac{5}{6}$ | (18) | (10) | $1\frac{5}{36}$ | (36) |
| (11) | $1\frac{1}{10}$ | (20) | (11) | $1\frac{1}{4}$ | (20) |
| (12) | $\frac{29}{63}$ | (63) | (12) | $\frac{29}{44}$ | (44) |

E66-70 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 66 | | | 67 | | | 68 | | |
|------|-----------------|------|------|-----------------|------|------|------------------|------|
| (1) | $\frac{1}{2}$ | (6) | (1) | $1\frac{5}{28}$ | (28) | (1) | $\frac{35}{36}$ | (36) |
| (2) | $\frac{19}{24}$ | (24) | (2) | $\frac{28}{45}$ | (45) | (2) | $1\frac{3}{10}$ | (10) |
| (3) | $\frac{32}{45}$ | (45) | (3) | $1\frac{1}{20}$ | (20) | (3) | $\frac{43}{60}$ | (60) |
| (4) | $1\frac{7}{40}$ | (40) | (4) | $\frac{14}{15}$ | (30) | (4) | $\frac{11}{14}$ | (14) |
| (5) | $\frac{17}{24}$ | (24) | (5) | $\frac{23}{35}$ | (70) | (5) | $1\frac{1}{48}$ | (48) |
| (6) | $1\frac{3}{28}$ | (28) | (6) | $\frac{29}{30}$ | (30) | (6) | $\frac{1}{2}$ | (18) |
| 66 | | | 67 | | | 68 | | |
| (7) | $1\frac{4}{21}$ | (21) | (7) | $1\frac{1}{14}$ | (14) | (7) | $1\frac{1}{6}$ | (30) |
| (8) | $\frac{17}{21}$ | (42) | (8) | $\frac{23}{80}$ | (80) | (8) | $1\frac{1}{16}$ | (16) |
| (9) | $1\frac{1}{6}$ | (30) | (9) | $\frac{7}{45}$ | (90) | (9) | $1\frac{17}{60}$ | (60) |
| (10) | $\frac{11}{16}$ | (16) | (10) | $\frac{19}{20}$ | (20) | (10) | $\frac{11}{12}$ | (24) |
| (11) | $1\frac{1}{18}$ | (18) | (11) | $1\frac{1}{3}$ | (21) | (11) | $\frac{19}{52}$ | (52) |
| (12) | $\frac{7}{50}$ | (50) | (12) | $\frac{6}{7}$ | (28) | (12) | $1\frac{2}{15}$ | (30) |

[Check if students use the LCM
indicated in the brackets below.]

E66-70

| 69 | | | 70 | | |
|------|-----------------|------|------|-----------------|------|
| (1) | $1\frac{5}{24}$ | (24) | (1) | $\frac{43}{72}$ | (72) |
| (2) | $\frac{23}{36}$ | (36) | (2) | $\frac{27}{28}$ | (28) |
| (3) | $\frac{26}{35}$ | (70) | (3) | $\frac{69}{80}$ | (80) |
| (4) | $\frac{19}{30}$ | (30) | (4) | $1\frac{1}{4}$ | (20) |
| (5) | $\frac{9}{20}$ | (20) | (5) | $1\frac{1}{42}$ | (42) |
| (6) | $1\frac{1}{14}$ | (42) | (6) | $1\frac{1}{6}$ | (24) |
| 69 | | | 70 | | |
| (7) | $\frac{29}{36}$ | (36) | (7) | $\frac{21}{50}$ | (50) |
| (8) | $1\frac{2}{11}$ | (22) | (8) | $1\frac{1}{15}$ | (30) |
| (9) | $\frac{19}{72}$ | (72) | (9) | $\frac{59}{60}$ | (60) |
| (10) | $\frac{11}{54}$ | (54) | (10) | $\frac{31}{66}$ | (66) |
| (11) | $\frac{23}{90}$ | (90) | (11) | $1\frac{1}{14}$ | (70) |
| (12) | $\frac{9}{34}$ | (34) | (12) | $\frac{1}{2}$ | (38) |

E71-75 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 71 | | 72 | | 73 | |
|------|------------------|------|------|------------------|------|
| (1) | $2\frac{3}{4}$ | (4) | (1) | $3\frac{1}{6}$ | (6) |
| (2) | $3\frac{5}{8}$ | (8) | (2) | $3\frac{1}{9}$ | (9) |
| (3) | $4\frac{7}{8}$ | (8) | (3) | $3\frac{8}{9}$ | (9) |
| (4) | $4\frac{5}{8}$ | (8) | (4) | $4\frac{2}{9}$ | (9) |
| (5) | $5\frac{7}{8}$ | (8) | (5) | $4\frac{5}{9}$ | (9) |
| (6) | $6\frac{7}{8}$ | (8) | (6) | $5\frac{1}{9}$ | (9) |
| (1) | $4\frac{1}{3}$ | (6) | (1) | $5\frac{1}{5}$ | (10) |
| (2) | $5\frac{1}{5}$ | (10) | (2) | $2\frac{9}{10}$ | (10) |
| (3) | $2\frac{9}{10}$ | (10) | (3) | $3\frac{1}{2}$ | (10) |
| (4) | $3\frac{1}{2}$ | (10) | (4) | $5\frac{1}{10}$ | (10) |
| (5) | $5\frac{1}{10}$ | (10) | (5) | $\frac{23}{60}$ | (60) |
| (6) | $\frac{23}{60}$ | (60) | | | |
| 71 | | 72 | | 73 | |
| (7) | $3\frac{3}{5}$ | (10) | (7) | $2\frac{4}{5}$ | (10) |
| (8) | $4\frac{1}{2}$ | (10) | (8) | $3\frac{7}{10}$ | (10) |
| (9) | $5\frac{9}{10}$ | (10) | (9) | $5\frac{1}{10}$ | (10) |
| (10) | $2\frac{1}{4}$ | (12) | (10) | $5\frac{3}{4}$ | (12) |
| (11) | $3\frac{7}{12}$ | (12) | (11) | $4\frac{11}{12}$ | (12) |
| (12) | $4\frac{3}{4}$ | (12) | (12) | $6\frac{5}{24}$ | (24) |
| (7) | $3\frac{2}{5}$ | (10) | (7) | $\frac{7}{15}$ | (30) |
| (8) | $\frac{7}{15}$ | (30) | (8) | $5\frac{1}{12}$ | (12) |
| (9) | $5\frac{1}{12}$ | (12) | (9) | $5\frac{5}{21}$ | (42) |
| (10) | $5\frac{5}{21}$ | (42) | (10) | $\frac{13}{35}$ | (70) |
| (11) | $\frac{13}{35}$ | (70) | (11) | $7\frac{11}{30}$ | (30) |
| (12) | $7\frac{11}{30}$ | (30) | (12) | | |

* 74a (1) Problem with mixed number + mixed number

| 74 | | | 75 | | |
|------|------------------|------|------|------------------|------|
| (1)* | $3\frac{5}{8}$ | (8) | (1) | $5\frac{8}{9}$ | (9) |
| (2) | $5\frac{7}{9}$ | (9) | (2) | $1\frac{1}{18}$ | (18) |
| (3) | $7\frac{7}{10}$ | (10) | (3) | $4\frac{1}{2}$ | (10) |
| (4) | $5\frac{7}{12}$ | (12) | (4) | $4\frac{13}{24}$ | (24) |
| (5) | $6\frac{9}{10}$ | (30) | (5) | $\frac{22}{45}$ | (45) |
| (6) | $8\frac{26}{45}$ | (45) | (6) | $1\frac{1}{48}$ | (48) |
| 74 | | | 75 | | |
| (7) | $3\frac{1}{2}$ | (10) | (7) | $3\frac{5}{9}$ | (9) |
| (8) | $4\frac{11}{24}$ | (24) | (8) | $6\frac{1}{20}$ | (20) |
| (9) | $3\frac{19}{36}$ | (36) | (9) | $\frac{13}{28}$ | (28) |
| (10) | $\frac{11}{21}$ | (42) | (10) | $2\frac{13}{16}$ | (16) |
| (11) | $3\frac{11}{14}$ | (14) | (11) | $1\frac{1}{36}$ | (36) |
| (12) | $1\frac{23}{36}$ | (36) | (12) | $\frac{19}{40}$ | (40) |

E76-80 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 76 | | 77 | | 78 | |
|----------------------|------|-----------------------|------|-----------------------|------|
| (1) $4\frac{1}{8}$ | (8) | (1) $3\frac{11}{12}$ | (12) | (1) $6\frac{1}{3}$ | (6) |
| (2) $3\frac{13}{24}$ | (24) | (2) $1\frac{11}{30}$ | (30) | (2) $2\frac{23}{24}$ | (24) |
| (3) $1\frac{11}{30}$ | (30) | (3) $3\frac{7}{18}$ | (18) | (3) $5\frac{1}{10}$ | (10) |
| (4) $\frac{18}{35}$ | (70) | (4) $5\frac{3}{4}$ | (20) | (4) $\frac{29}{66}$ | (66) |
| (5) $4\frac{7}{16}$ | (16) | (5) $\frac{29}{42}$ | (42) | (5) $3\frac{31}{36}$ | (36) |
| (6) $2\frac{11}{18}$ | (18) | (6) $\frac{37}{44}$ | (44) | (6) $\frac{8}{21}$ | (42) |
| 76 | | 77 | | 78 | |
| (7) $3\frac{9}{10}$ | (10) | (7) $3\frac{13}{18}$ | (18) | (7) $3\frac{27}{40}$ | (40) |
| (8) $\frac{31}{60}$ | (60) | (8) $1\frac{11}{28}$ | (28) | (8) $2\frac{7}{12}$ | (12) |
| (9) $\frac{23}{30}$ | (30) | (9) $\frac{49}{80}$ | (80) | (9) $2\frac{11}{35}$ | (70) |
| (10) $1\frac{7}{45}$ | (90) | (10) $2\frac{1}{6}$ | (24) | (10) $3\frac{13}{30}$ | (30) |
| (11) $2\frac{4}{9}$ | (18) | (11) $2\frac{19}{25}$ | (25) | (11) $5\frac{47}{48}$ | (48) |
| (12) $1\frac{7}{20}$ | (20) | (12) $\frac{37}{50}$ | (50) | (12) $5\frac{5}{14}$ | (42) |

| 79 | | | 80 | | |
|------|------------------|------|------|------------------|------|
| (1) | $5\frac{7}{15}$ | (15) | (1) | $7\frac{17}{24}$ | (24) |
| (2) | $3\frac{7}{18}$ | (18) | (2) | $6\frac{1}{6}$ | (12) |
| (3) | $2\frac{17}{20}$ | (20) | (3) | $3\frac{23}{35}$ | (70) |
| (4) | $3\frac{17}{40}$ | (40) | (4) | $5\frac{1}{80}$ | (80) |
| (5) | $5\frac{43}{60}$ | (60) | (5) | $\frac{3}{4}$ | (20) |
| (6) | $\frac{19}{30}$ | (30) | (6) | $3\frac{11}{72}$ | (72) |
| 79 | | | 80 | | |
| (7) | $8\frac{1}{2}$ | (6) | (7) | $4\frac{5}{9}$ | (9) |
| (8) | $4\frac{1}{4}$ | (12) | (8) | $4\frac{1}{2}$ | (10) |
| (9) | $9\frac{23}{36}$ | (36) | (9) | $3\frac{1}{21}$ | (42) |
| (10) | $2\frac{53}{60}$ | (60) | (10) | $1\frac{17}{45}$ | (90) |
| (11) | $\frac{41}{44}$ | (44) | (11) | $\frac{37}{60}$ | (60) |
| (12) | $6\frac{25}{54}$ | (54) | (12) | $\frac{13}{70}$ | (70) |

E81-85 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 81 | | 82 | | 83 | |
|-----------------------|------|----------------------|------|-----------------------|------|
| (1) $6\frac{1}{2}$ | (6) | (1) $2\frac{1}{12}$ | (12) | (1) $5\frac{1}{18}$ | (18) |
| (2) $6\frac{1}{5}$ | (10) | (2) $3\frac{2}{21}$ | (21) | (2) $2\frac{19}{40}$ | (40) |
| (3) $5\frac{19}{24}$ | (24) | (3) $4\frac{1}{2}$ | (10) | (3) $1\frac{7}{36}$ | (36) |
| (4) $1\frac{23}{60}$ | (60) | (4) $3\frac{25}{28}$ | (28) | (4) $3\frac{27}{28}$ | (28) |
| (5) $4\frac{2}{3}$ | (15) | (5) $6\frac{1}{16}$ | (16) | (5) $4\frac{17}{18}$ | (18) |
| (6) $1\frac{1}{16}$ | (16) | (6) $1\frac{5}{36}$ | (36) | (6) $3\frac{11}{40}$ | (40) |
| 81 | | 82 | | 83 | |
| (7) $3\frac{9}{10}$ | (10) | (7) $7\frac{41}{60}$ | (60) | (7) $6\frac{18}{35}$ | (70) |
| (8) $5\frac{5}{36}$ | (36) | (8) $4\frac{1}{45}$ | (45) | (8) $3\frac{17}{30}$ | (30) |
| (9) $3\frac{13}{14}$ | (14) | (9) $2\frac{29}{48}$ | (48) | (9) $5\frac{1}{6}$ | (18) |
| (10) $4\frac{23}{48}$ | (48) | (10) $\frac{59}{60}$ | (60) | (10) $2\frac{7}{30}$ | (60) |
| (11) $4\frac{11}{36}$ | (36) | (11) $3\frac{4}{21}$ | (21) | (11) $4\frac{24}{25}$ | (25) |
| (12) $5\frac{5}{24}$ | (24) | (12) $8\frac{1}{8}$ | (24) | (12) $4\frac{2}{5}$ | (30) |

[Check if students use the LCM
indicated in the brackets below.]

E81-85

| 84 | | | 85 | | |
|------|------------------|------|------|------------------|------|
| (1) | $3\frac{13}{24}$ | (24) | (1) | $6\frac{1}{14}$ | (14) |
| (2) | $4\frac{17}{21}$ | (42) | (2) | $3\frac{1}{10}$ | (30) |
| (3) | $4\frac{1}{16}$ | (16) | (3) | $5\frac{43}{48}$ | (48) |
| (4) | $\frac{11}{60}$ | (60) | (4) | $10\frac{1}{4}$ | (20) |
| (5) | $2\frac{10}{11}$ | (22) | (5) | $\frac{11}{42}$ | (42) |
| (6) | $6\frac{1}{6}$ | (24) | (6) | $9\frac{33}{50}$ | (50) |
| 84 | | | 85 | | |
| (7) | $3\frac{1}{2}$ | (14) | (7) | $3\frac{5}{7}$ | (7) |
| (8) | $5\frac{29}{80}$ | (80) | (8) | $2\frac{26}{45}$ | (45) |
| (9) | $2\frac{22}{45}$ | (90) | (9) | $3\frac{29}{36}$ | (36) |
| (10) | $1\frac{1}{50}$ | (50) | (10) | $\frac{13}{33}$ | (66) |
| (11) | $7\frac{25}{26}$ | (26) | (11) | $8\frac{5}{28}$ | (28) |
| (12) | $6\frac{73}{90}$ | (90) | (12) | $6\frac{5}{12}$ | (60) |

E86-90 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 86 | | 87 | | 88 | |
|-----------------------|------|-----------------------|------|-----------------------|------|
| (1) $5\frac{5}{6}$ | (6) | (1) $4\frac{13}{24}$ | (24) | (1) $4\frac{3}{8}$ | (8) |
| (2) $4\frac{1}{6}$ | (12) | (2) $5\frac{3}{10}$ | (10) | (2) $3\frac{5}{12}$ | (12) |
| (3) $5\frac{23}{60}$ | (60) | (3) $5\frac{13}{28}$ | (28) | (3) $1\frac{29}{30}$ | (30) |
| (4) $4\frac{6}{35}$ | (70) | (4) $4\frac{1}{30}$ | (30) | (4) $3\frac{29}{36}$ | (36) |
| (5) $3\frac{1}{9}$ | (18) | (5) $2\frac{2}{5}$ | (20) | (5) $3\frac{17}{80}$ | (80) |
| (6) $5\frac{31}{36}$ | (36) | (6) $2\frac{17}{60}$ | (60) | (6) $1\frac{19}{42}$ | (42) |
| 86 | | 87 | | 88 | |
| (7) $4\frac{1}{18}$ | (18) | (7) $3\frac{1}{12}$ | (12) | (7) $4\frac{1}{3}$ | (15) |
| (8) $2\frac{9}{20}$ | (20) | (8) $\frac{7}{20}$ | (60) | (8) $1\frac{13}{30}$ | (60) |
| (9) $5\frac{3}{20}$ | (20) | (9) $\frac{19}{30}$ | (60) | (9) $5\frac{5}{24}$ | (24) |
| (10) $2\frac{7}{15}$ | (60) | (10) $4\frac{1}{21}$ | (21) | (10) $3\frac{23}{48}$ | (48) |
| (11) $3\frac{13}{60}$ | (60) | (11) $2\frac{10}{63}$ | (63) | (11) $5\frac{29}{54}$ | (54) |
| (12) $\frac{9}{80}$ | (80) | (12) $3\frac{11}{42}$ | (42) | (12) $1\frac{7}{12}$ | (60) |

| 89 | | | 90 | | |
|------|------------------|------|------|------------------|------|
| (1) | $4\frac{23}{60}$ | (60) | (1) | $7\frac{3}{28}$ | (28) |
| (2) | $1\frac{8}{21}$ | (42) | (2) | $2\frac{35}{48}$ | (48) |
| (3) | $5\frac{3}{16}$ | (16) | (3) | $1\frac{19}{63}$ | (63) |
| (4) | $2\frac{13}{36}$ | (36) | (4) | $5\frac{1}{4}$ | (28) |
| (5) | $6\frac{1}{4}$ | (20) | (5) | $2\frac{7}{12}$ | (60) |
| (6) | $1\frac{1}{12}$ | (60) | (6) | $5\frac{19}{70}$ | (70) |
| 89 | | | 90 | | |
| (7) | $\frac{13}{48}$ | (48) | (7) | $5\frac{5}{7}$ | (7) |
| (8) | $2\frac{27}{80}$ | (80) | (8) | $2\frac{29}{60}$ | (60) |
| (9) | $6\frac{5}{22}$ | (22) | (9) | $3\frac{1}{60}$ | (60) |
| (10) | $1\frac{31}{48}$ | (48) | (10) | $4\frac{5}{42}$ | (42) |
| (11) | $5\frac{19}{27}$ | (27) | (11) | $1\frac{1}{10}$ | (30) |
| (12) | $4\frac{3}{20}$ | (60) | (12) | $6\frac{29}{70}$ | (70) |

E91-95 (4-6 min)

(Check if students use the LCM indicated in the brackets below.)

| 91 | | 92 | | 93 | |
|------|-----|------|-----|---------------------|------|
| (1) | 60 | (1) | 80 | (1) $\frac{13}{30}$ | (30) |
| (2) | 60 | (2) | 48 | (2) $\frac{5}{36}$ | (36) |
| (3) | 36 | (3) | 90 | (3) $\frac{13}{20}$ | (20) |
| (4) | 60 | (4) | 60 | (4) $\frac{2}{15}$ | (60) |
| (5) | 42 | (5) | 84 | (5) $\frac{5}{26}$ | (26) |
| (6) | 48 | (6) | 84 | | |
| (7) | 90 | (7) | 60 | | |
| | | (8) | 72 | | |
| 91 | | 92 | | 93 | |
| (8) | 84 | (9) | 80 | (6) $\frac{33}{80}$ | (80) |
| | | (10) | 60 | (7) $\frac{11}{90}$ | (90) |
| (9) | 84 | (11) | 150 | (8) $\frac{11}{84}$ | (84) |
| | | (12) | 96 | (9) $\frac{5}{8}$ | (24) |
| (10) | 72 | (13) | 70 | (10) $\frac{8}{75}$ | (75) |
| | | (14) | 105 | (11) $\frac{1}{4}$ | (28) |
| (11) | 75 | (15) | 140 | | |
| | | (16) | 90 | | |
| (12) | 120 | | | | |

[Check if students use the LCM
indicated in the brackets below.]

E91-95

| 94 | | | 95 | | |
|------|-----------------|------|------|------------------|-------|
| (1) | $\frac{47}{72}$ | (72) | (1) | $1\frac{3}{40}$ | (40) |
| (2) | $\frac{5}{12}$ | (60) | (2) | $\frac{19}{50}$ | (50) |
| (3) | $\frac{13}{22}$ | (22) | (3) | $\frac{1}{4}$ | (28) |
| (4) | $\frac{7}{72}$ | (72) | (4) | $\frac{9}{10}$ | (30) |
| (5) | $\frac{1}{3}$ | (30) | (5) | $\frac{2}{3}$ | (33) |
| 94 | | | 95 | | |
| (6) | $\frac{17}{90}$ | (90) | (6) | $1\frac{1}{20}$ | (20) |
| (7) | $\frac{19}{42}$ | (42) | (7) | $\frac{5}{42}$ | (84) |
| (8) | $\frac{1}{2}$ | (30) | (8) | $\frac{29}{120}$ | (120) |
| (9) | $\frac{5}{32}$ | (32) | (9) | $\frac{11}{34}$ | (34) |
| (10) | $\frac{4}{9}$ | (36) | (10) | $\frac{13}{105}$ | (105) |
| (11) | $\frac{7}{12}$ | (36) | (11) | $\frac{1}{8}$ | (40) |

E96-100 (4-6 min)

[Check if students use the LCM indicated in the brackets below.]

| 96 | | | 97 | | | 98 | | |
|-----|------------------|------|-----|------------------|------|-----|------------------|-------|
| 1. | | | 1. | | | 1. | | |
| (1) | $4\frac{1}{36}$ | (36) | (1) | $3\frac{1}{7}$ | (7) | (1) | $6\frac{1}{9}$ | (9) |
| (2) | $5\frac{43}{60}$ | (60) | (2) | $5\frac{11}{21}$ | (42) | (2) | $4\frac{1}{45}$ | (45) |
| (3) | $7\frac{11}{35}$ | (70) | (3) | $6\frac{5}{12}$ | (60) | (3) | $6\frac{17}{36}$ | (36) |
| (4) | $3\frac{29}{80}$ | (80) | (4) | $2\frac{1}{8}$ | (24) | (4) | $4\frac{1}{50}$ | (50) |
| (5) | $3\frac{1}{4}$ | (20) | (5) | $\frac{23}{84}$ | (84) | (5) | $9\frac{1}{15}$ | (30) |
| (6) | $\frac{29}{75}$ | (75) | (6) | $2\frac{14}{45}$ | (90) | (6) | $\frac{23}{140}$ | (140) |

| 96 | | | 97 | | | 98 | | |
|-----|---------------|----------------------|-----|---------------|----------------------|-----|---------------|--------------------|
| 2. | | | 2. | | | 2. | | |
| (1) | $\frac{2}{3}$ | (8) $\frac{1}{2}$ | (1) | $\frac{1}{3}$ | (8) $\frac{2}{3}$ | (1) | $\frac{1}{2}$ | (8) $\frac{1}{5}$ |
| (2) | $\frac{2}{3}$ | (9) $\frac{6}{11}$ | (2) | $\frac{1}{2}$ | (9) $\frac{3}{5}$ | (2) | $\frac{1}{3}$ | (9) $\frac{2}{5}$ |
| (3) | $\frac{2}{7}$ | (10) $\frac{3}{5}$ | (3) | $\frac{3}{4}$ | (10) $\frac{10}{17}$ | (3) | $\frac{2}{3}$ | (10) $\frac{1}{6}$ |
| (4) | $\frac{2}{3}$ | (11) $\frac{2}{3}$ | (4) | $\frac{2}{5}$ | (11) $\frac{8}{9}$ | (4) | $\frac{3}{5}$ | (11) $\frac{1}{2}$ |
| (5) | $\frac{1}{2}$ | (12) $\frac{13}{19}$ | (5) | $\frac{7}{9}$ | (12) $\frac{1}{4}$ | (5) | $\frac{1}{4}$ | (12) $\frac{5}{9}$ |
| (6) | $\frac{3}{4}$ | (13) $\frac{2}{5}$ | (6) | $\frac{2}{3}$ | (13) $\frac{1}{4}$ | (6) | $\frac{3}{4}$ | (13) $\frac{1}{7}$ |
| (7) | $\frac{1}{2}$ | (14) $\frac{7}{8}$ | (7) | $\frac{1}{4}$ | (14) $\frac{4}{7}$ | (7) | $\frac{4}{5}$ | (14) $\frac{4}{7}$ |

| 99 | | | 100 | | |
|-----|------------------|------|-----|-------------------|------|
| 1. | | | 1. | | |
| (1) | $4\frac{1}{3}$ | (15) | (1) | $1\frac{1}{2}$ | (18) |
| (2) | $8\frac{1}{6}$ | (30) | (2) | $6\frac{19}{20}$ | (60) |
| (3) | $7\frac{38}{63}$ | (63) | (3) | $8\frac{37}{45}$ | (90) |
| (4) | $5\frac{2}{3}$ | (30) | (4) | $6\frac{1}{9}$ | (36) |
| (5) | $6\frac{59}{96}$ | (96) | (5) | $12\frac{11}{72}$ | (72) |
| (6) | $2\frac{1}{4}$ | (36) | (6) | $8\frac{7}{8}$ | (40) |
| 99 | | | 100 | | |
| 2. | | | 2. | | |
| (1) | $\frac{1}{2}$ | (8) | (1) | $\frac{1}{2}$ | (8) |
| (2) | $\frac{1}{3}$ | (9) | (2) | $\frac{1}{2}$ | (9) |
| (3) | $\frac{2}{3}$ | (10) | (3) | $\frac{2}{3}$ | (10) |
| (4) | $\frac{1}{4}$ | (11) | (4) | $\frac{1}{3}$ | (11) |
| (5) | $\frac{3}{4}$ | (12) | (5) | $\frac{3}{4}$ | (12) |
| (6) | $\frac{3}{5}$ | (13) | (6) | $\frac{3}{4}$ | (13) |
| (7) | $\frac{4}{5}$ | (14) | (7) | $\frac{1}{3}$ | (14) |

E101-105 (3-4 min)

[Check if students use the LCM indicated in the brackets below.]

| 101 | | 102 | | 103 | |
|-----|---------------|-----|----------------|-----|---------------|
| (1) | $\frac{2}{5}$ | (1) | $\frac{3}{5}$ | (1) | $\frac{1}{8}$ |
| (2) | $\frac{1}{5}$ | (2) | $1\frac{1}{5}$ | (2) | $\frac{3}{8}$ |
| (3) | $\frac{4}{7}$ | (3) | $2\frac{2}{5}$ | (3) | $\frac{1}{8}$ |
| (4) | $\frac{1}{7}$ | (4) | 1 | (4) | $\frac{2}{9}$ |
| (5) | 0 | (5) | $\frac{5}{9}$ | (5) | $\frac{1}{9}$ |
| (6) | $\frac{7}{9}$ | (6) | $2\frac{3}{7}$ | (6) | $\frac{2}{9}$ |
| (7) | $\frac{4}{9}$ | (7) | $1\frac{3}{8}$ | (7) | |
| (8) | 0 | (8) | 2 | (8) | |

| 101 | | 102 | | 103 | |
|------|------------------------|------|-----------------|------|----------------|
| (9) | $1\frac{\boxed{3}}{7}$ | (9) | $2\frac{1}{7}$ | (9) | $\frac{5}{8}$ |
| (10) | $2\frac{3}{7}$ | (10) | $1\frac{7}{8}$ | (10) | $\frac{1}{8}$ |
| (11) | $2\frac{4}{7}$ | (11) | $2\frac{7}{9}$ | (11) | $\frac{3}{8}$ |
| (12) | $2\frac{1}{7}$ | (12) | 3 | (12) | $\frac{2}{15}$ |
| (13) | $3\frac{3}{7}$ | (13) | $\frac{2}{9}$ | (13) | $\frac{4}{15}$ |
| (14) | $\boxed{1}\frac{4}{7}$ | (14) | $2\frac{5}{9}$ | (14) | $\frac{1}{15}$ |
| (15) | $3\frac{5}{7}$ | (15) | $2\frac{6}{11}$ | (15) | $\frac{4}{9}$ |
| (16) | $\frac{6}{7}$ | (16) | $\frac{3}{11}$ | (16) | |
| (17) | $\boxed{1}$ | (17) | 0 | (17) | |

[Check if students use the LCM
indicated in the brackets below.]

E101-105

| 104 | | | 105 | | |
|------|-----------------|------|------|------------------|------|
| (1) | $1\frac{2}{9}$ | (9) | (1) | $1\frac{1}{6}$ | (6) |
| (2) | $1\frac{5}{9}$ | (9) | (2) | $1\frac{1}{12}$ | (12) |
| (3) | $1\frac{2}{9}$ | (9) | (3) | $1\frac{7}{15}$ | (15) |
| (4) | $1\frac{1}{9}$ | (9) | (4) | $2\frac{7}{12}$ | (12) |
| (5) | $2\frac{1}{9}$ | (9) | (5) | $1\frac{1}{6}$ | (6) |
| (6) | $3\frac{4}{9}$ | (9) | (6) | $3\frac{5}{8}$ | (8) |
| 104 | | | 105 | | |
| (7) | $1\frac{3}{10}$ | (10) | (7) | $1\frac{5}{18}$ | (18) |
| (8) | $2\frac{1}{10}$ | (10) | (8) | $1\frac{5}{24}$ | (24) |
| (9) | $4\frac{1}{10}$ | (10) | (9) | $4\frac{9}{20}$ | (20) |
| (10) | $4\frac{1}{12}$ | (12) | (10) | $2\frac{3}{10}$ | (10) |
| (11) | $3\frac{5}{12}$ | (12) | (11) | $3\frac{13}{36}$ | (36) |
| (12) | $1\frac{1}{12}$ | (12) | (12) | $3\frac{1}{24}$ | (24) |
| (13) | $\frac{7}{12}$ | (12) | (13) | $3\frac{5}{9}$ | (9) |

E106-110 (3-4 min)

[Check if students use the LCM indicated in the brackets below.]

| 106 | | 107 | | 108 | |
|------|-----------------|------|------|------------------|------|
| (1) | $\frac{4}{21}$ | (21) | (1) | $1\frac{3}{14}$ | (14) |
| (2) | $1\frac{1}{20}$ | (20) | (2) | $\frac{1}{5}$ | (15) |
| (3) | $2\frac{1}{12}$ | (12) | (3) | $1\frac{1}{20}$ | (20) |
| (4) | $2\frac{1}{4}$ | (4) | (4) | $\frac{2}{21}$ | (21) |
| (5) | $1\frac{3}{40}$ | (40) | (5) | $2\frac{11}{15}$ | (30) |
| (6) | $3\frac{2}{5}$ | (5) | (6) | $2\frac{3}{4}$ | (4) |
| 106 | | 107 | | 108 | |
| (7) | $\frac{11}{5}$ | (10) | (7) | $1\frac{1}{16}$ | (16) |
| (8) | $\frac{2}{5}$ | (10) | (8) | $2\frac{3}{20}$ | (20) |
| (9) | $\frac{1}{2}$ | (10) | (9) | $1\frac{1}{2}$ | (14) |
| (10) | $1\frac{1}{4}$ | (12) | (10) | $3\frac{1}{18}$ | (18) |
| (11) | $2\frac{2}{3}$ | (12) | (11) | $3\frac{1}{15}$ | (15) |
| (12) | $1\frac{1}{3}$ | (12) | (12) | $4\frac{1}{3}$ | (21) |
| (13) | $\frac{1}{6}$ | (12) | (13) | $3\frac{1}{2}$ | (8) |
| (7) | $3\frac{1}{21}$ | (21) | (7) | $3\frac{1}{21}$ | (21) |
| (8) | $2\frac{3}{4}$ | (20) | (8) | $2\frac{3}{4}$ | (20) |
| (9) | $3\frac{1}{14}$ | (14) | (9) | $3\frac{1}{14}$ | (14) |
| (10) | $5\frac{1}{24}$ | (24) | (10) | $5\frac{1}{24}$ | (24) |
| (11) | $3\frac{2}{15}$ | (15) | (11) | $3\frac{2}{15}$ | (15) |
| (12) | $2\frac{7}{18}$ | (18) | (12) | $2\frac{7}{18}$ | (18) |
| (13) | $1\frac{1}{8}$ | (16) | (13) | $1\frac{1}{8}$ | (16) |

[Check if students use the LCM
indicated in the brackets below.]

E106-110

| 109 | | | 110 | | |
|------|-----------------|------|------|------------------|------|
| (1) | $1\frac{5}{14}$ | (14) | (1) | $1\frac{1}{6}$ | (6) |
| (2) | $\frac{7}{9}$ | (18) | (2) | $2\frac{5}{12}$ | (12) |
| (3) | $\frac{8}{15}$ | (30) | (3) | $2\frac{1}{18}$ | (18) |
| (4) | $1\frac{1}{15}$ | (15) | (4) | $\frac{3}{20}$ | (20) |
| (5) | $2\frac{1}{20}$ | (20) | (5) | $3\frac{11}{24}$ | (24) |
| (6) | $4\frac{2}{3}$ | (3) | (6) | $3\frac{7}{10}$ | (10) |
| 109 | | | 110 | | |
| (7) | $2\frac{8}{15}$ | (15) | (7) | $3\frac{1}{3}$ | (6) |
| (8) | $1\frac{9}{20}$ | (20) | (8) | $2\frac{1}{2}$ | (6) |
| (9) | $1\frac{3}{10}$ | (30) | (9) | $3\frac{1}{12}$ | (12) |
| (10) | $\frac{11}{18}$ | (18) | (10) | $2\frac{1}{24}$ | (24) |
| (11) | $3\frac{2}{3}$ | (21) | (11) | $\frac{11}{15}$ | (30) |
| (12) | $3\frac{3}{20}$ | (20) | (12) | $3\frac{5}{36}$ | (36) |
| (13) | $5\frac{1}{4}$ | (8) | (13) | $6\frac{2}{11}$ | (11) |

E111-115 (3-5 min)

| 111 | | | 112 | | |
|------|----------------|-----|-----------------|----------------|----------------|
| 1. | | | | | |
| (1) | $\frac{9}{7}$ | (4) | $1\frac{8}{5}$ | (1) | $4\frac{2}{5}$ |
| (2) | $\frac{11}{7}$ | (5) | $2\frac{6}{5}$ | (2) | $4\frac{3}{5}$ |
| (3) | $\frac{8}{7}$ | (6) | $3\frac{12}{7}$ | (3) | $4\frac{4}{5}$ |
| 2. | | | | | |
| (1) | $\frac{4}{7}$ | | | (4) | $5\frac{3}{7}$ |
| (2) | $\frac{5}{7}$ | | | (5) | $5\frac{6}{7}$ |
| (3) | $\frac{6}{7}$ | | | (6) | $5\frac{5}{7}$ |
| | | | | (7) | $5\frac{6}{7}$ |
| 111 | | | 112 | | |
| (4) | $1\frac{2}{7}$ | | (8) | $3\frac{3}{5}$ | |
| (5) | $1\frac{3}{7}$ | | (9) | $2\frac{3}{5}$ | |
| (6) | $1\frac{4}{7}$ | | (10) | $1\frac{4}{5}$ | |
| (7) | $2\frac{4}{7}$ | | (11) | $\frac{2}{5}$ | |
| (8) | $2\frac{5}{7}$ | | (12) | $3\frac{3}{7}$ | |
| (9) | $3\frac{5}{7}$ | | (13) | $\frac{6}{7}$ | |
| (10) | $3\frac{6}{7}$ | | (14) | $2\frac{6}{7}$ | |
| | | | (15) | $1\frac{5}{7}$ | |

(Check if students use the LCM indicated in the brackets below.)

E111-115

| 113 | 114 | 115 |
|---------------------|---------------------|----------------------|
| (1) $1\frac{1}{5}$ | (1) $4\frac{4}{7}$ | (1) $\frac{7}{9}$ |
| (2) $1\frac{3}{5}$ | (2) $3\frac{3}{7}$ | (2) $4\frac{1}{9}$ |
| (3) $1\frac{2}{5}$ | (3) $4\frac{1}{7}$ | (3) $\frac{8}{11}$ |
| (4) $1\frac{1}{7}$ | (4) $3\frac{6}{7}$ | (4) $3\frac{4}{7}$ |
| (5) $\frac{5}{7}$ | (5) $5\frac{1}{7}$ | (5) $\frac{4}{9}$ |
| (6) $\frac{3}{7}$ | (6) $4\frac{6}{7}$ | (6) $3\frac{2}{7}$ |
| (7) $\frac{5}{7}$ | (7) $5\frac{5}{7}$ | (7) $2\frac{1}{6}$ |
| 113 | 114 | 115 |
| (8) $2\frac{3}{5}$ | (8) $\frac{2}{5}$ | (8) $\frac{2}{9}$ |
| (9) $2\frac{1}{5}$ | (9) $\frac{1}{5}$ | (9) $\frac{1}{3}$ |
| (10) $1\frac{2}{5}$ | (10) $1\frac{5}{7}$ | (10) $\frac{1}{8}$ |
| (11) $1\frac{3}{5}$ | (11) $1\frac{4}{7}$ | (11) $\frac{3}{8}$ |
| (12) $3\frac{2}{7}$ | (12) $2\frac{2}{7}$ | (12) $1\frac{1}{12}$ |
| (13) $3\frac{3}{7}$ | (13) $2\frac{7}{9}$ | (13) $1\frac{3}{14}$ |
| (14) $2\frac{4}{7}$ | (14) $3\frac{5}{9}$ | (14) $\frac{7}{15}$ |
| (15) $2\frac{3}{7}$ | (15) $4\frac{1}{9}$ | (15) |

E116-120 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 116 | | 117 | | 118 | |
|------|-----------------|------|-----------------|------|------------------|
| (1) | $1\frac{4}{7}$ | (1) | $1\frac{1}{2}$ | (1) | $1\frac{5}{9}$ |
| (2) | $1\frac{5}{7}$ | (2) | $1\frac{3}{4}$ | (2) | $\frac{2}{9}$ |
| (3) | $1\frac{3}{7}$ | (3) | $1\frac{1}{2}$ | (3) | $1\frac{7}{10}$ |
| (4) | $1\frac{2}{7}$ | (4) | $3\frac{2}{3}$ | (4) | $\frac{4}{5}$ |
| (5) | $1\frac{4}{7}$ | (5) | $1\frac{1}{3}$ | (5) | $2\frac{2}{3}$ |
| (6) | $\frac{6}{7}$ | (6) | $\frac{3}{5}$ | (6) | $1\frac{7}{12}$ |
| (7) | $1\frac{2}{7}$ | (7) | $2\frac{1}{5}$ | (7) | $1\frac{3}{10}$ |
| 116 | | 117 | | 118 | |
| (8) | $\frac{1}{6}$ | (8) | $\frac{5}{12}$ | (8) | $\frac{1}{12}$ |
| (9) | $\frac{1}{2}$ | (9) | $\frac{3}{20}$ | (9) | $\frac{1}{6}$ |
| (10) | $\frac{1}{8}$ | (10) | $\frac{1}{6}$ | (10) | $1\frac{17}{24}$ |
| (11) | $\frac{2}{5}$ | (11) | $1\frac{1}{12}$ | (11) | $\frac{5}{18}$ |
| (12) | $1\frac{5}{12}$ | (12) | $\frac{13}{24}$ | (12) | $2\frac{4}{35}$ |
| (13) | $\frac{1}{6}$ | (13) | $2\frac{1}{30}$ | (13) | $1\frac{7}{24}$ |
| (14) | $1\frac{1}{15}$ | (14) | $1\frac{8}{15}$ | (14) | $\frac{1}{20}$ |

(Check if students use the LCM
indicated in the brackets below.)

E116-120

| 119 | | | 120 | | |
|------|------------------|------|------|------------------|------|
| (1) | $2\frac{5}{6}$ | | (1) | $3\frac{2}{3}$ | |
| (2) | $4\frac{7}{8}$ | | (2) | $4\frac{8}{9}$ | |
| (3) | $4\frac{1}{14}$ | | (3) | $2\frac{7}{16}$ | |
| (4) | $2\frac{11}{15}$ | | (4) | $3\frac{7}{18}$ | |
| (5) | $4\frac{2}{7}$ | | (5) | $\frac{13}{15}$ | |
| (6) | $2\frac{2}{3}$ | | (6) | $3\frac{5}{6}$ | |
| (7) | $1\frac{2}{5}$ | | (7) | $\frac{3}{4}$ | |
| 119 | | | 120 | | |
| (8) | $\frac{1}{28}$ | (28) | (8) | $1\frac{1}{18}$ | (18) |
| (9) | $1\frac{7}{12}$ | (12) | (9) | $1\frac{5}{6}$ | (30) |
| (10) | $\frac{2}{15}$ | (30) | (10) | $1\frac{1}{3}$ | (6) |
| (11) | $2\frac{17}{24}$ | (24) | (11) | $2\frac{17}{60}$ | (60) |
| (12) | $1\frac{7}{10}$ | (30) | (12) | $\frac{4}{35}$ | (70) |
| (13) | $1\frac{5}{42}$ | (42) | (13) | $1\frac{1}{24}$ | (24) |
| (14) | $\frac{5}{36}$ | (36) | (14) | $\frac{2}{45}$ | (45) |

E121-125 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 121 | | | 122 | | | 123 | | |
|------|-----------------|------|------|------------------|------|------|------------------|------|
| (1) | $\frac{5}{8}$ | (8) | (1) | $\frac{9}{10}$ | (10) | (1) | $2\frac{3}{8}$ | (8) |
| (2) | $\frac{3}{8}$ | (8) | (2) | $\frac{1}{2}$ | (10) | (2) | $2\frac{13}{18}$ | (18) |
| (3) | $\frac{3}{8}$ | (8) | (3) | $\frac{3}{4}$ | (12) | (3) | $2\frac{5}{12}$ | (12) |
| (4) | $\frac{5}{6}$ | (6) | (4) | $\frac{23}{24}$ | (24) | (4) | $1\frac{5}{8}$ | (8) |
| (5) | $\frac{14}{15}$ | (15) | (5) | $\frac{13}{15}$ | (30) | (5) | $1\frac{3}{4}$ | (12) |
| 121 | | | 122 | | | 123 | | |
| (6) | $\frac{11}{2}$ | (6) | (6) | $1\frac{5}{6}$ | (6) | (6) | $3\frac{1}{6}$ | (6) |
| (7) | $\frac{1}{2}$ | (10) | (7) | $1\frac{7}{8}$ | (8) | (7) | $2\frac{5}{6}$ | (6) |
| (8) | $\frac{3}{4}$ | (12) | (8) | $1\frac{9}{10}$ | (10) | (8) | $3\frac{5}{12}$ | (12) |
| (9) | $\frac{5}{6}$ | (12) | (9) | $2\frac{11}{14}$ | (14) | (9) | $2\frac{7}{12}$ | (12) |
| (10) | $\frac{2}{5}$ | (15) | (10) | $2\frac{15}{16}$ | (16) | (10) | $3\frac{2}{15}$ | (15) |
| | | | (11) | $2\frac{17}{21}$ | (21) | (11) | $2\frac{13}{15}$ | (15) |

(Check if students use the LCM
indicated in the brackets below.)

E121-125

| 124 | | 125 | |
|------|------------------|------|--|
| (1) | $1\frac{5}{6}$ | (6) | |
| (2) | $1\frac{7}{8}$ | (8) | |
| (3) | $2\frac{7}{10}$ | (10) | |
| (4) | $2\frac{11}{12}$ | (12) | |
| (5) | $2\frac{11}{24}$ | (24) | |
| (1) | $2\frac{13}{20}$ | (20) | |
| (2) | $1\frac{4}{5}$ | (5) | |
| (3) | $1\frac{19}{24}$ | (24) | |
| (4) | $1\frac{5}{6}$ | (6) | |
| (5) | $\frac{2}{5}$ | (5) | |
| 124 | | 125 | |
| (6) | $1\frac{5}{7}$ | (7) | |
| (7) | $1\frac{2}{9}$ | (9) | |
| (8) | $1\frac{11}{12}$ | (12) | |
| (9) | $1\frac{7}{9}$ | (18) | |
| (10) | $1\frac{5}{24}$ | (24) | |
| (11) | $4\frac{3}{8}$ | (8) | |
| (6) | $1\frac{7}{18}$ | (18) | |
| (7) | $5\frac{1}{15}$ | (30) | |
| (8) | $\frac{5}{9}$ | (9) | |
| (9) | $\frac{1}{4}$ | (4) | |
| (10) | $3\frac{2}{3}$ | (12) | |
| (11) | $1\frac{23}{36}$ | (36) | |

E126-130 (3-5 min)

(Check if students use the LCM indicated in the brackets below.)

| 126 | | | 127 | | | 128 | | |
|------|------------------|------|------|------------------|------|------|------------------|------|
| (1) | $3\frac{5}{7}$ | (7) | (1) | $\frac{5}{8}$ | (8) | (1) | $2\frac{2}{5}$ | (5) |
| (2) | $1\frac{5}{8}$ | (8) | (2) | $\frac{11}{12}$ | (12) | (2) | $1\frac{1}{9}$ | (9) |
| (3) | $1\frac{1}{6}$ | (6) | (3) | $1\frac{7}{36}$ | (36) | (3) | $\frac{13}{24}$ | (24) |
| (4) | $2\frac{19}{20}$ | (20) | (4) | $4\frac{1}{6}$ | (6) | (4) | $1\frac{23}{30}$ | (30) |
| (5) | $2\frac{1}{2}$ | (6) | (5) | $\frac{7}{12}$ | (12) | (5) | $1\frac{1}{4}$ | (12) |
| (6) | $3\frac{1}{24}$ | (24) | (6) | $\frac{1}{3}$ | (6) | (6) | $1\frac{19}{24}$ | (24) |
| 126 | | | 127 | | | 128 | | |
| (7) | $2\frac{2}{5}$ | (10) | (7) | $\frac{7}{15}$ | (30) | (7) | $1\frac{5}{8}$ | (8) |
| (8) | $1\frac{13}{24}$ | (24) | (8) | $\frac{17}{20}$ | (20) | (8) | $1\frac{1}{2}$ | (14) |
| (9) | $1\frac{11}{18}$ | (18) | (9) | $2\frac{2}{15}$ | (15) | (9) | $\frac{17}{21}$ | (21) |
| (10) | $\frac{11}{12}$ | (12) | (10) | $\frac{2}{3}$ | (6) | (10) | $1\frac{3}{5}$ | (10) |
| (11) | $1\frac{11}{20}$ | (20) | (11) | $3\frac{19}{24}$ | (24) | (11) | $2\frac{14}{15}$ | (30) |
| (12) | $1\frac{5}{6}$ | (12) | (12) | $1\frac{3}{4}$ | (4) | (12) | $1\frac{7}{10}$ | (10) |

[Check if students use the LCM
indicated in the brackets below.]

E126-130

| 129 | | | 130 | | |
|------|------------------|------|------|------------------|------|
| (1) | $\frac{8}{9}$ | (9) | (1) | $4\frac{4}{5}$ | (10) |
| (2) | $1\frac{1}{24}$ | (24) | (2) | $\frac{7}{18}$ | (18) |
| (3) | $\frac{17}{24}$ | (24) | (3) | $1\frac{2}{3}$ | (6) |
| (4) | $4\frac{7}{15}$ | (30) | (4) | $1\frac{7}{36}$ | (36) |
| (5) | $1\frac{2}{3}$ | (12) | (5) | $\frac{1}{3}$ | (12) |
| (6) | $1\frac{8}{15}$ | (30) | (6) | $2\frac{14}{15}$ | (15) |
| 129 | | | 130 | | |
| (7) | $1\frac{4}{9}$ | (9) | (7) | $2\frac{3}{7}$ | (7) |
| (8) | $1\frac{9}{10}$ | (10) | (8) | $3\frac{1}{3}$ | (3) |
| (9) | $1\frac{23}{30}$ | (30) | (9) | $1\frac{9}{10}$ | (10) |
| (10) | $6\frac{5}{8}$ | (8) | (10) | $1\frac{13}{24}$ | (24) |
| (11) | $2\frac{13}{15}$ | (15) | (11) | $1\frac{8}{9}$ | (18) |
| (12) | $2\frac{13}{18}$ | (18) | (12) | $1\frac{5}{18}$ | (18) |

E131-135 (4-6 min)

(Check if students use the LCM indicated in the brackets below.)

| 131 | | 132 | | 133 | |
|------|------------------|------|------|------------------|------|
| (1) | $\frac{9}{20}$ | (20) | (1) | $\frac{7}{12}$ | (12) |
| (2) | $1\frac{1}{12}$ | (12) | (2) | $\frac{5}{8}$ | (8) |
| (3) | $1\frac{2}{5}$ | (10) | (3) | $1\frac{5}{24}$ | (24) |
| (4) | $\frac{1}{3}$ | (12) | (4) | $\frac{5}{9}$ | (18) |
| (5) | $\frac{5}{8}$ | (8) | (5) | $1\frac{13}{15}$ | (15) |
| (6) | $\frac{11}{24}$ | (24) | (6) | $6\frac{3}{20}$ | (20) |
| 131 | | 132 | | 133 | |
| (7) | $1\frac{19}{48}$ | (48) | (7) | $3\frac{3}{35}$ | (70) |
| (8) | $2\frac{7}{40}$ | (40) | (8) | $\frac{14}{15}$ | (15) |
| (9) | $1\frac{7}{12}$ | (24) | (9) | $1\frac{1}{20}$ | (60) |
| (10) | $1\frac{23}{30}$ | (30) | (10) | $1\frac{1}{3}$ | (12) |
| (11) | $1\frac{3}{20}$ | (60) | (11) | $2\frac{43}{45}$ | (45) |
| (12) | $2\frac{1}{4}$ | (4) | (12) | $1\frac{3}{4}$ | (4) |

[Check if students use the LCM
indicated in the brackets below.]

E131-135

| 134 | | | 135 | | |
|------|------------------|------|------|------------------|------|
| (1) | $\frac{1}{3}$ | (12) | (1) | $\frac{3}{16}$ | (16) |
| (2) | $1\frac{15}{16}$ | (16) | (2) | $1\frac{5}{6}$ | (12) |
| (3) | $2\frac{17}{60}$ | (60) | (3) | $1\frac{13}{24}$ | (24) |
| (4) | $\frac{3}{5}$ | (5) | (4) | $2\frac{11}{60}$ | (60) |
| (5) | $3\frac{7}{12}$ | (60) | (5) | $5\frac{1}{12}$ | (36) |
| (6) | $6\frac{2}{15}$ | (60) | (6) | $8\frac{13}{36}$ | (36) |
| 134 | | | 135 | | |
| (7) | $1\frac{7}{18}$ | (18) | (7) | $4\frac{11}{48}$ | (48) |
| (8) | $7\frac{8}{35}$ | (70) | (8) | $\frac{20}{21}$ | (21) |
| (9) | $1\frac{1}{3}$ | (33) | (9) | $\frac{17}{30}$ | (30) |
| (10) | $5\frac{13}{14}$ | (14) | (10) | $\frac{11}{14}$ | (70) |
| (11) | $3\frac{17}{18}$ | (18) | (11) | $3\frac{1}{20}$ | (60) |
| (12) | $2\frac{5}{72}$ | (72) | (12) | $4\frac{1}{9}$ | (9) |

E136-140 (4-6 min)

(Check if students use the LCM indicated in the brackets below.)

| 136 | | | 137 | | | 138 | | |
|-----|------------------|------|-----|------------------|------|-----|------------------|------|
| 1. | | | 1. | | | 1. | | |
| (1) | $\frac{3}{10}$ | (10) | (1) | $\frac{13}{15}$ | (30) | (1) | $\frac{19}{28}$ | (28) |
| (2) | $\frac{33}{40}$ | (40) | (2) | $\frac{19}{36}$ | (36) | (2) | $\frac{13}{18}$ | (18) |
| (3) | $1\frac{17}{24}$ | (24) | (3) | $1\frac{44}{45}$ | (45) | (3) | $1\frac{2}{3}$ | (15) |
| (4) | $\frac{5}{6}$ | (30) | (4) | $1\frac{47}{80}$ | (80) | (4) | $2\frac{15}{56}$ | (56) |
| (5) | $\frac{5}{7}$ | (7) | (5) | $4\frac{7}{11}$ | (11) | (5) | $5\frac{9}{14}$ | (14) |
| (6) | $8\frac{3}{40}$ | (40) | (6) | $7\frac{53}{72}$ | (72) | (6) | $9\frac{19}{48}$ | (48) |

| 136 | | | 137 | | | 138 | | | |
|-----|---------------|------|---------------|------|---------------|-----|---------------|------|---------------|
| 2. | | | 2. | | | 2. | | | |
| (1) | $\frac{1}{2}$ | (8) | $\frac{1}{2}$ | (8) | $\frac{1}{3}$ | (1) | $\frac{1}{5}$ | (8) | $\frac{2}{3}$ |
| (2) | $\frac{1}{3}$ | (9) | $\frac{1}{3}$ | (9) | $\frac{2}{3}$ | (2) | $\frac{4}{5}$ | (9) | $\frac{1}{5}$ |
| (3) | $\frac{2}{3}$ | (10) | $\frac{2}{3}$ | (10) | $\frac{1}{5}$ | (3) | $\frac{1}{4}$ | (10) | $\frac{1}{7}$ |
| (4) | $\frac{1}{4}$ | (11) | $\frac{1}{3}$ | (11) | $\frac{2}{5}$ | (4) | $\frac{3}{4}$ | (11) | $\frac{3}{7}$ |
| (5) | $\frac{1}{2}$ | (12) | $\frac{2}{3}$ | (12) | $\frac{4}{5}$ | (5) | $\frac{1}{2}$ | (12) | $\frac{1}{4}$ |
| (6) | $\frac{3}{4}$ | (13) | $\frac{1}{2}$ | (13) | $\frac{2}{5}$ | (6) | $\frac{1}{2}$ | (13) | $\frac{1}{5}$ |
| (7) | $\frac{1}{5}$ | (14) | $\frac{3}{4}$ | (14) | $\frac{3}{5}$ | (7) | $\frac{1}{4}$ | (14) | $\frac{3}{5}$ |

(Check if students use the LCM
indicated in the brackets below.)

E136-140

| 139 | | | 140 | | |
|-----|------------------------|------|-----------------------|------------------|-----------------|
| 1. | | | 1. | | |
| (1) | $\frac{19}{24}$ | (24) | (1) | $\frac{13}{18}$ | (18) |
| (2) | $\frac{13}{15}$ | (15) | (2) | $\frac{33}{35}$ | (70) |
| (3) | $3\frac{7}{60}$ | (60) | (3) | $1\frac{2}{3}$ | (12) |
| (4) | $2\frac{23}{36}$ | (36) | (4) | $3\frac{16}{45}$ | (45) |
| (5) | $\frac{19}{36}$ | (36) | (5) | $7\frac{5}{8}$ | (8) |
| (6) | $7\frac{5}{6}$ | (42) | (6) | $8\frac{31}{48}$ | (48) |
| 139 | | | 140 | | |
| 2. | | 3. | 2. | | |
| (1) | $2\frac{\boxed{9}}{4}$ | (1) | $\frac{\boxed{9}}{4}$ | (1) | $4\frac{1}{2}$ |
| (2) | $5\frac{2}{5}$ | (2) | $\frac{18}{5}$ | (2) | $4\frac{1}{2}$ |
| (3) | $6\frac{5}{6}$ | (3) | $\frac{29}{6}$ | (3) | $7\frac{1}{2}$ |
| (4) | $4\frac{4}{7}$ | (4) | $\frac{38}{7}$ | (4) | $8\frac{1}{3}$ |
| (5) | $7\frac{3}{8}$ | (5) | $\frac{53}{8}$ | (5) | $12\frac{1}{2}$ |
| (6) | $2\frac{2}{9}$ | (6) | $\frac{70}{9}$ | (6) | $10\frac{1}{2}$ |
| (7) | $8\frac{3}{10}$ | (7) | $\frac{89}{10}$ | (7) | $11\frac{1}{4}$ |

E141-150 (3-4 min)

* 142a (5) Problem where the terms to be reduced switch position

| 141 | 142 | 143 | 144 | 145 |
|----------------------------|----------------------------|---------------------|---------------------|--------------------|
| (1) $\frac{\boxed{3}}{10}$ | (1) $\frac{\boxed{5}}{8}$ | (1) $\frac{1}{2}$ | (1) $\frac{7}{12}$ | (1) $3\frac{1}{7}$ |
| (2) $\frac{9}{20}$ | (2) $\frac{4}{\boxed{15}}$ | (2) $\frac{1}{3}$ | (2) $\frac{7}{20}$ | (2) $5\frac{3}{5}$ |
| (3) $\frac{5}{24}$ | (3) $\frac{1}{6}$ | (3) $\frac{3}{4}$ | (3) $\frac{20}{21}$ | (3) $4\frac{3}{4}$ |
| (4) $\frac{6}{35}$ | (4) $\frac{2}{15}$ | (4) $\frac{1}{4}$ | (4) $\frac{11}{14}$ | (4) $3\frac{5}{7}$ |
| (5) $\frac{8}{21}$ | (5)* $\frac{7}{12}$ | (5) $\frac{1}{6}$ | (5) $\frac{13}{18}$ | (5) $6\frac{2}{3}$ |
| (6) $\frac{15}{28}$ | (6) $\frac{2}{21}$ | (6) $\frac{1}{6}$ | (6) $\frac{22}{35}$ | |
| (7) $\frac{3}{40}$ | (7) $\frac{1}{7}$ | (7) $\frac{1}{4}$ | | |
| 141 | 142 | 143 | 144 | 145 |
| (8) $\frac{6}{35}$ | (8) $\frac{3}{20}$ | (8) $\frac{2}{15}$ | (7) $\frac{2}{3}$ | (6) $\frac{7}{20}$ |
| (9) $\frac{12}{35}$ | (9) $\frac{7}{10}$ | (9) $\frac{4}{21}$ | (8) $\frac{8}{11}$ | (7) $\frac{3}{8}$ |
| (10) $\frac{9}{56}$ | (10) $\frac{5}{12}$ | (10) $\frac{2}{3}$ | (9) $\frac{10}{11}$ | (8) $1\frac{1}{5}$ |
| (11) $\frac{25}{42}$ | (11) $\frac{15}{28}$ | (11) $\frac{5}{32}$ | (10) $\frac{2}{3}$ | (9) 2 |
| (12) $\frac{35}{54}$ | (12) $\frac{4}{9}$ | (12) $\frac{9}{14}$ | (11) $\frac{3}{4}$ | (10) 3 |
| (13) $\frac{10}{63}$ | (13) $\frac{3}{20}$ | (13) $\frac{8}{63}$ | (12) $\frac{2}{3}$ | (11) 9 |
| (14) $\frac{15}{56}$ | (14) $\frac{14}{27}$ | (14) $\frac{1}{8}$ | | |
| (15) $\frac{35}{72}$ | (15) $\frac{10}{33}$ | (15) $\frac{9}{16}$ | | |

(Check if students reduce in the intermediate steps.)

| 146 | 147 | 148 | 149 | 150 |
|---------------------|-----------------------|----------------------|----------------------|-----------------------|
| (1) $\frac{1}{6}$ | (1) $\frac{4}{7}$ | (1) $1\frac{3}{5}$ | (1) $\frac{7}{8}$ | (1) $4\frac{1}{2}$ |
| (2) $1\frac{1}{4}$ | (2) 1 | (2) $\frac{5}{7}$ | (2) $2\frac{2}{5}$ | (2) 2 |
| (3) 5 | (3) $4\frac{1}{5}$ | (3) $4\frac{2}{3}$ | (3) $1\frac{3}{4}$ | (3) 10 |
| (4) 2 | (4) $1\frac{1}{4}$ | (4) $4\frac{1}{2}$ | (4) $5\frac{3}{4}$ | (4) 6 |
| (5) $\frac{3}{4}$ | (5) $\frac{1}{8}$ | (5) 6 | (5) 5 | (5) $1\frac{5}{7}$ |
| (6) $\frac{5}{21}$ | (6) $\frac{7}{12}$ | (6) 15 | (6) $2\frac{5}{7}$ | (6) $\frac{2}{3}$ |
| 146 | 147 | 148 | 149 | 150 |
| (7) $\frac{5}{6}$ | (7) $1\frac{5}{9}$ | (7) $10\frac{1}{2}$ | (7) $\frac{5}{6}$ | (7) $1\frac{4}{5}$ |
| (8) 3 | (8) $\frac{1}{2}$ | (8) 6 | (8) 6 | (8) $2\frac{2}{5}$ |
| (9) $7\frac{1}{2}$ | (9) $1\frac{1}{4}$ | (9) $2\frac{1}{10}$ | (9) 2 | (9) $1\frac{1}{4}$ |
| (10) $\frac{5}{6}$ | (10) $\frac{7}{11}$ | (10) $\frac{10}{27}$ | (10) $\frac{1}{10}$ | (10) $1\frac{1}{6}$ |
| (11) $2\frac{1}{3}$ | (11) 4 | (11) $\frac{15}{16}$ | (11) $\frac{1}{3}$ | (11) $\frac{3}{22}$ |
| (12) 10 | (12) $1\frac{11}{16}$ | (12) $5\frac{5}{12}$ | (12) $3\frac{4}{15}$ | (12) $4\frac{13}{16}$ |

E151-160 (3-5 min)

(Check if students reduce in the intermediate steps.)

| 151 | 152 | 153 | 154 | 155 |
|---------------------|---------------------|----------------------|---------------------|---------------------|
| (1) $\frac{6}{7}$ | (1) $\frac{3}{10}$ | (1) $\frac{1}{14}$ | (1) $4\frac{1}{2}$ | (1) $\frac{3}{8}$ |
| (2) $\frac{8}{9}$ | (2) $\frac{2}{13}$ | (2) $\frac{5}{8}$ | (2) $2\frac{1}{2}$ | (2) $\frac{4}{5}$ |
| (3) $\frac{10}{13}$ | (3) 2 | (3) $3\frac{1}{3}$ | (3) 5 | (3) $4\frac{2}{3}$ |
| (4) $\frac{12}{17}$ | (4) 4 | (4) 3 | (4) $1\frac{5}{7}$ | (4) $1\frac{1}{12}$ |
| (5) $\frac{6}{11}$ | (5) 6 | (5) $2\frac{1}{2}$ | (5) $6\frac{1}{2}$ | (5) $1\frac{1}{3}$ |
| (6) $9\frac{1}{3}$ | (6) 14 | (6) $\frac{11}{25}$ | (6) 2 | (6) $4\frac{2}{5}$ |
| (7) $4\frac{4}{5}$ | (7) 5 | (7) $1\frac{1}{9}$ | (7) $\frac{1}{2}$ | (7) $2\frac{2}{3}$ |
| 151 | 152 | 153 | 154 | 155 |
| (8) $\frac{1}{2}$ | (8) $\frac{7}{8}$ | (8) $1\frac{1}{2}$ | (8) $\frac{1}{4}$ | (8) $16\frac{1}{2}$ |
| (9) $\frac{5}{6}$ | (9) $1\frac{1}{3}$ | (9) $5\frac{1}{2}$ | (9) 4 | (9) 2 |
| (10) $\frac{2}{5}$ | (10) $\frac{4}{5}$ | (10) $\frac{1}{6}$ | (10) 28 | (10) $1\frac{1}{5}$ |
| (11) $\frac{4}{7}$ | (11) $1\frac{1}{2}$ | (11) $\frac{1}{2}$ | (11) $\frac{1}{3}$ | (11) $3\frac{1}{4}$ |
| (12) $4\frac{1}{2}$ | (12) 11 | (12) $7\frac{1}{2}$ | (12) $6\frac{2}{3}$ | (12) $3\frac{1}{3}$ |
| (13) $5\frac{1}{2}$ | (13) $\frac{5}{21}$ | (13) $1\frac{1}{2}$ | (13) $\frac{1}{2}$ | (13) $\frac{3}{28}$ |
| (14) $4\frac{2}{3}$ | (14) $3\frac{1}{8}$ | (14) $13\frac{1}{2}$ | (14) $1\frac{1}{6}$ | (14) $1\frac{1}{9}$ |

(Check if students reduce in the intermediate steps.)

| 156 | 157 | 158 | 159 | 160 |
|---------------------|----------------------|----------------------|-----------------------|----------------------|
| (1) $2\frac{1}{4}$ | (1) 1 | (1) 4 | (1) $2\frac{1}{4}$ | (1) 7 |
| (2) $\frac{2}{15}$ | (2) $3\frac{3}{5}$ | (2) 8 | (2) $3\frac{3}{4}$ | (2) $18\frac{2}{3}$ |
| (3) $1\frac{2}{5}$ | (3) $25\frac{1}{2}$ | (3) $\frac{7}{15}$ | (3) $\frac{3}{5}$ | (3) $3\frac{3}{4}$ |
| (4) 22 | (4) $3\frac{1}{2}$ | (4) $2\frac{4}{7}$ | (4) $34\frac{1}{2}$ | (4) $2\frac{5}{6}$ |
| (5) $4\frac{1}{2}$ | (5) $1\frac{1}{3}$ | (5) $\frac{5}{6}$ | (5) $\frac{3}{4}$ | (5) $17\frac{1}{3}$ |
| (6) $2\frac{2}{3}$ | (6) $\frac{3}{4}$ | (6) $4\frac{1}{2}$ | (6) $1\frac{4}{5}$ | (6) $\frac{9}{14}$ |
| (7) $1\frac{5}{9}$ | (7) 9 | (7) $4\frac{8}{15}$ | (7) 14 | (7) $1\frac{5}{9}$ |
| 156 | 157 | 158 | 159 | 160 |
| (8) $\frac{21}{44}$ | (8) $\frac{2}{7}$ | (8) 10 | (8) $3\frac{3}{4}$ | (8) 30 |
| (9) 25 | (9) $2\frac{1}{4}$ | (9) $3\frac{1}{2}$ | (9) $15\frac{1}{3}$ | (9) $4\frac{2}{7}$ |
| (10) $1\frac{5}{6}$ | (10) $3\frac{9}{10}$ | (10) $7\frac{1}{2}$ | (10) $1\frac{1}{2}$ | (10) 4 |
| (11) $\frac{7}{24}$ | (11) 2 | (11) $1\frac{4}{5}$ | (11) $4\frac{4}{9}$ | (11) $7\frac{3}{16}$ |
| (12) $8\frac{1}{2}$ | (12) 34 | (12) $22\frac{2}{3}$ | (12) $13\frac{1}{3}$ | (12) $18\frac{1}{2}$ |
| (13) 15 | (13) $1\frac{2}{9}$ | (13) $1\frac{2}{3}$ | (13) 4 | (13) $23\frac{1}{3}$ |
| (14) 2 | (14) $4\frac{1}{2}$ | (14) $3\frac{1}{2}$ | (14) $1\frac{17}{28}$ | (14) $\frac{2}{3}$ |

E161-170 (3-5 min)

(Check if students reduce in the intermediate steps.)

| 161 | 162 | 163 | 164 | 165 |
|-----------------------|---------------------|----------------------|----------------------|----------------------|
| (1) $\frac{14}{15}$ | (1) $1\frac{2}{5}$ | (1) $\frac{21}{32}$ | (1) $1\frac{1}{5}$ | (1) $\frac{1}{14}$ |
| (2) $\frac{15}{28}$ | (2) $1\frac{1}{7}$ | (2) $\frac{40}{49}$ | (2) $1\frac{1}{4}$ | (2) $\frac{1}{12}$ |
| (3) $\frac{16}{35}$ | (3) $1\frac{3}{4}$ | (3) $\frac{15}{56}$ | (3) $5\frac{1}{3}$ | (3) $\frac{5}{21}$ |
| (4) $1\frac{5}{9}$ | (4) $\frac{7}{9}$ | (4) $1\frac{1}{8}$ | (4) $\frac{1}{2}$ | (4) $1\frac{1}{5}$ |
| (5) $2\frac{5}{8}$ | (5) $\frac{19}{21}$ | (5) $1\frac{5}{9}$ | (5) $1\frac{1}{2}$ | (5) $\frac{3}{50}$ |
| 161 | 162 | 163 | 164 | 165 |
| (6) $4\frac{1}{6}$ | (6) $5\frac{1}{4}$ | (6) $\frac{4}{11}$ | (7) $\frac{7}{12}$ | (6) $\frac{4}{21}$ |
| (7) $2\frac{2}{9}$ | (7) $5\frac{1}{5}$ | (7) $1\frac{3}{4}$ | (8) $\frac{11}{45}$ | (7) $\frac{3}{20}$ |
| (8) $5\frac{4}{9}$ | (8) $1\frac{5}{9}$ | (8) $\frac{10}{21}$ | (9) $1\frac{1}{9}$ | (8) $\frac{2}{21}$ |
| (9) $2\frac{1}{10}$ | (9) $3\frac{1}{5}$ | (9) $1\frac{1}{7}$ | (10) $\frac{5}{7}$ | (9) $\frac{3}{28}$ |
| (10) $2\frac{5}{8}$ | (10) $2\frac{7}{8}$ | (10) $\frac{10}{21}$ | (11) $2\frac{4}{5}$ | (10) $1\frac{3}{10}$ |
| (11) $1\frac{19}{20}$ | (11) $3\frac{1}{7}$ | (11) $\frac{9}{10}$ | (12) $\frac{11}{18}$ | (11) $\frac{2}{11}$ |

(Check if students reduce in the intermediate steps.)

| 166 | 167 | 168 | 169 | 170 |
|--------------------|---------------------|---------------------|-----------------------|---------------------|
| (1) $3\frac{1}{3}$ | (1) $3\frac{3}{4}$ | (1) $\frac{7}{15}$ | (1) $1\frac{1}{2}$ | (1) $\frac{11}{16}$ |
| (2) $\frac{3}{10}$ | (2) $9\frac{1}{3}$ | (2) $\frac{1}{15}$ | (2) 15 | (2) $\frac{4}{7}$ |
| (3) $\frac{3}{11}$ | (3) $\frac{3}{28}$ | (3) 9 | (3) 2 | (3) $1\frac{1}{2}$ |
| (4) $\frac{2}{3}$ | (4) $1\frac{2}{5}$ | (4) $1\frac{1}{3}$ | (4) $\frac{1}{9}$ | (4) $1\frac{1}{5}$ |
| (5) $\frac{2}{5}$ | (5) $3\frac{1}{2}$ | (5) $\frac{1}{2}$ | (5) $\frac{3}{7}$ | (5) $5\frac{2}{3}$ |
| (6) $\frac{1}{26}$ | (6) $1\frac{1}{2}$ | (6) $\frac{4}{5}$ | (6) $\frac{3}{8}$ | (6) 3 |
| 166 | 167 | 168 | 169 | 170 |
| (7) $\frac{2}{3}$ | (7) $1\frac{1}{2}$ | (7) $1\frac{1}{2}$ | (7) $\frac{1}{21}$ | (7) $\frac{2}{31}$ |
| (8) $\frac{1}{2}$ | (8) $1\frac{4}{5}$ | (8) 4 | (8) 2 | (8) 2 |
| (9) $\frac{5}{7}$ | (9) $\frac{5}{9}$ | (9) $6\frac{3}{4}$ | (9) $\frac{9}{16}$ | (9) $1\frac{1}{2}$ |
| (10) $\frac{3}{5}$ | (10) $2\frac{2}{7}$ | (10) $\frac{5}{12}$ | (10) $\frac{3}{4}$ | (10) $1\frac{1}{2}$ |
| (11) 3 | (11) 2 | (11) 2 | (11) $\frac{8}{11}$ | (11) 4 |
| (12) $\frac{3}{5}$ | (12) $4\frac{3}{8}$ | (12) $2\frac{1}{2}$ | (12) $1\frac{13}{15}$ | (12) $1\frac{3}{4}$ |

E171-180 (3-5 min)

(Check if students reduce in the intermediate steps.)

| 171 | 172 | 173 | 174 | 175 |
|---------------------|----------------------|---------------------|----------------------|---------------------|
| (1) $\frac{1}{12}$ | (1) $\frac{2}{3}$ | (1) $\frac{1}{2}$ | (1) $\frac{8}{63}$ | (1) $\frac{20}{27}$ |
| (2) $\frac{1}{15}$ | (2) $\frac{5}{18}$ | (2) $\frac{1}{4}$ | (2) $\frac{5}{32}$ | (2) 16 |
| (3) $\frac{6}{35}$ | (3) $\frac{9}{10}$ | (3) $\frac{2}{3}$ | (3) $\frac{9}{20}$ | (3) $2\frac{1}{12}$ |
| (4) $\frac{1}{9}$ | (4) $\frac{7}{16}$ | (4) $1\frac{1}{3}$ | (4) $2\frac{17}{32}$ | (4) $1\frac{7}{8}$ |
| (5) $\frac{5}{16}$ | (5) $5\frac{1}{2}$ | (5) $2\frac{1}{2}$ | (5) $\frac{49}{54}$ | (5) $\frac{6}{25}$ |
| (6) $\frac{1}{15}$ | (6) $\frac{2}{3}$ | (6) $12\frac{1}{2}$ | (6) $2\frac{7}{9}$ | (6) $6\frac{6}{11}$ |
| (7) $\frac{1}{12}$ | (7) 3 | (7) 56 | (7) $10\frac{5}{24}$ | (7) $9\frac{1}{3}$ |
| 171 | 172 | 173 | 174 | 175 |
| (8) $\frac{10}{27}$ | (8) $1\frac{1}{5}$ | (8) $3\frac{1}{2}$ | (8) $\frac{7}{18}$ | (8) $1\frac{1}{15}$ |
| (9) $\frac{7}{24}$ | (9) $1\frac{1}{6}$ | (9) $\frac{1}{3}$ | (9) $\frac{9}{10}$ | (9) $2\frac{1}{4}$ |
| (10) $\frac{1}{9}$ | (10) $2\frac{2}{5}$ | (10) $\frac{5}{11}$ | (10) $\frac{5}{16}$ | (10) $\frac{1}{12}$ |
| (11) $\frac{3}{20}$ | (11) $4\frac{1}{2}$ | (11) $4\frac{4}{5}$ | (11) 2 | (11) $\frac{3}{10}$ |
| (12) $\frac{7}{16}$ | (12) $\frac{2}{5}$ | (12) $\frac{6}{25}$ | (12) $\frac{3}{8}$ | (12) $2\frac{2}{3}$ |
| (13) $\frac{9}{10}$ | (13) $\frac{2}{9}$ | (13) $\frac{2}{7}$ | (13) $\frac{1}{4}$ | (13) $\frac{2}{11}$ |
| (14) $\frac{1}{4}$ | (14) $\frac{15}{16}$ | (14) $1\frac{1}{6}$ | (14) $1\frac{7}{8}$ | (14) $6\frac{6}{7}$ |

(Check if students reduce in the intermediate steps.)

E171-180

| 176 | 177 | 178 | 179 | 180 |
|---------------------|----------------------|----------------------|----------------------|---------------------|
| (1) $1\frac{1}{2}$ | (1) $1\frac{1}{2}$ | (1) $1\frac{13}{15}$ | (1) $\frac{3}{7}$ | (1) $\frac{3}{11}$ |
| (2) $7\frac{1}{5}$ | (2) $1\frac{1}{4}$ | (2) $1\frac{3}{4}$ | (2) $1\frac{1}{27}$ | (2) $\frac{3}{11}$ |
| (3) $\frac{3}{10}$ | (3) $2\frac{2}{5}$ | (3) $1\frac{1}{4}$ | (3) $\frac{25}{28}$ | (3) $3\frac{1}{4}$ |
| (4) $\frac{5}{16}$ | (4) $\frac{1}{2}$ | (4) $1\frac{13}{15}$ | (4) $1\frac{2}{7}$ | (4) $3\frac{1}{4}$ |
| (5) $4\frac{1}{2}$ | (5) $1\frac{1}{8}$ | (5) $1\frac{1}{14}$ | (5) $2\frac{11}{12}$ | (5) $\frac{11}{14}$ |
| (6) $\frac{3}{4}$ | (6) $1\frac{1}{4}$ | (6) $1\frac{3}{4}$ | (6) $2\frac{11}{12}$ | (6) $\frac{11}{14}$ |
| (7) $\frac{2}{3}$ | (7) $2\frac{2}{5}$ | (7) $1\frac{1}{4}$ | (7) $\frac{6}{7}$ | (7) $\frac{28}{39}$ |
| 176 | 177 | 178 | 179 | 180 |
| (8) $1\frac{1}{2}$ | (8) $\frac{10}{27}$ | (8) $\frac{6}{7}$ | (8) $5\frac{29}{32}$ | (8) $\frac{3}{5}$ |
| (9) $7\frac{1}{5}$ | (9) $\frac{1}{9}$ | (9) $17\frac{1}{2}$ | (9) $5\frac{5}{9}$ | (9) $1\frac{1}{20}$ |
| (10) $\frac{3}{10}$ | (10) $4\frac{1}{2}$ | (10) $1\frac{5}{7}$ | (10) 2 | (10) $3\frac{1}{2}$ |
| (11) $\frac{5}{16}$ | (11) $1\frac{1}{15}$ | (11) 4 | (11) 28 | (11) 10 |
| (12) $4\frac{1}{2}$ | (12) $\frac{10}{27}$ | (12) $\frac{6}{7}$ | (12) $\frac{7}{9}$ | (12) $\frac{3}{4}$ |
| (13) $\frac{3}{4}$ | (13) $\frac{1}{9}$ | (13) $17\frac{1}{2}$ | (13) $2\frac{2}{3}$ | (13) 2 |
| (14) $\frac{2}{3}$ | (14) $1\frac{1}{15}$ | (14) 4 | (14) $2\frac{2}{3}$ | (14) $2\frac{4}{5}$ |

E181-190 (3-5 min)

| 181 | 182 | 183 | 184 | 185 |
|----------------------|-----------------------|-----------------------|----------------------|----------------------|
| (1) $\frac{3}{5}$ | (1) $1\frac{5}{6}$ | (1) $\frac{2}{5}$ | (1) $\frac{3}{5}$ | (1) $\frac{5}{8}$ |
| (2) $1\frac{1}{7}$ | (2) $3\frac{1}{12}$ | (2) $\frac{1}{4}$ | (2) $\frac{4}{5}$ | (2) $1\frac{3}{8}$ |
| (3) $1\frac{2}{9}$ | (3) $3\frac{5}{12}$ | (3) $1\frac{1}{2}$ | (3) $1\frac{3}{7}$ | (3) $1\frac{3}{8}$ |
| (4) $\frac{9}{10}$ | (4) $2\frac{7}{24}$ | (4) $\frac{1}{6}$ | (4) $2\frac{5}{7}$ | (4) $1\frac{5}{9}$ |
| (5) $\frac{4}{5}$ | (5) $4\frac{3}{10}$ | (5) $\frac{1}{5}$ | (5) $1\frac{2}{9}$ | (5) $\frac{8}{9}$ |
| (6) $\frac{1}{2}$ | (6) $5\frac{1}{12}$ | (6) $\frac{1}{2}$ | (6) $2\frac{4}{9}$ | (6) $1\frac{5}{9}$ |
| 181 | 182 | 183 | 184 | 185 |
| (7) $1\frac{1}{4}$ | (7) $3\frac{1}{6}$ | (7) $\frac{1}{20}$ | (7) $\frac{3}{4}$ | (7) $1\frac{5}{8}$ |
| (8) $1\frac{1}{12}$ | (8) $5\frac{7}{10}$ | (8) $\frac{1}{10}$ | (8) $\frac{2}{5}$ | (8) $1\frac{1}{4}$ |
| (9) $1\frac{5}{18}$ | (9) $4\frac{1}{36}$ | (9) $2\frac{7}{20}$ | (9) $1\frac{4}{7}$ | (9) $2\frac{5}{12}$ |
| (10) $\frac{17}{20}$ | (10) $6\frac{17}{28}$ | (10) $3\frac{1}{2}$ | (10) $2\frac{3}{8}$ | (10) $\frac{9}{10}$ |
| (11) $\frac{13}{24}$ | (11) $4\frac{22}{45}$ | (11) $1\frac{13}{28}$ | (11) $2\frac{2}{9}$ | (11) $2\frac{1}{4}$ |
| (12) $1\frac{9}{28}$ | (12) $4\frac{1}{6}$ | (12) $1\frac{3}{8}$ | (12) $1\frac{7}{10}$ | (12) $1\frac{1}{14}$ |
| (13) $\frac{3}{10}$ | (13) $2\frac{11}{50}$ | (13) $2\frac{8}{15}$ | (13) $2\frac{3}{10}$ | (13) $2\frac{1}{12}$ |

| 186 | 187 | 188 | 189 | 190 |
|---------------------|----------------------|---------------------|---------------------|---------------------|
| (1) $\frac{1}{6}$ | (1) $\frac{1}{4}$ | (1) $\frac{2}{3}$ | (1) $\frac{15}{28}$ | (1) $\frac{5}{21}$ |
| (2) $\frac{2}{5}$ | (2) $\frac{1}{5}$ | (2) $\frac{5}{6}$ | (2) $\frac{2}{3}$ | (2) $\frac{10}{27}$ |
| (3) $\frac{2}{3}$ | (3) $\frac{3}{4}$ | (3) 2 | (3) $\frac{2}{5}$ | (3) 8 |
| (4) $\frac{4}{5}$ | (4) $\frac{8}{9}$ | (4) $2\frac{7}{10}$ | (4) 12 | (4) $\frac{4}{9}$ |
| (5) $1\frac{2}{5}$ | (5) $\frac{2}{5}$ | (5) $\frac{1}{2}$ | (5) 20 | (5) 2 |
| (6) 2 | (6) $\frac{12}{13}$ | (6) $1\frac{1}{2}$ | (6) $\frac{4}{5}$ | (6) $\frac{5}{18}$ |
| (7) $\frac{3}{8}$ | (7) 6 | (7) $3\frac{1}{3}$ | (7) $\frac{1}{4}$ | (7) $3\frac{3}{5}$ |
| 186 | 187 | 188 | 189 | 190 |
| (8) $\frac{1}{2}$ | (8) $\frac{4}{5}$ | (8) $\frac{1}{2}$ | (8) $\frac{7}{12}$ | (8) $\frac{4}{9}$ |
| (9) $\frac{7}{10}$ | (9) 5 | (9) $\frac{1}{9}$ | (9) $\frac{5}{7}$ | (9) $13\frac{1}{2}$ |
| (10) $\frac{2}{35}$ | (10) $2\frac{1}{4}$ | (10) $\frac{1}{9}$ | (10) $2\frac{4}{5}$ | (10) $\frac{1}{2}$ |
| (11) $\frac{1}{8}$ | (11) $2\frac{3}{4}$ | (11) $\frac{1}{3}$ | (11) 2 | (11) $\frac{5}{19}$ |
| (12) $1\frac{1}{3}$ | (12) 8 | (12) $\frac{1}{8}$ | (12) $1\frac{1}{2}$ | (12) $7\frac{1}{2}$ |
| (13) $\frac{1}{3}$ | (13) $2\frac{1}{12}$ | (13) 8 | (13) $\frac{5}{6}$ | (13) $\frac{8}{9}$ |
| (14) 2 | (14) $5\frac{1}{4}$ | (14) $1\frac{1}{3}$ | (14) $\frac{1}{6}$ | (14) $2\frac{2}{3}$ |
| (15) 20 | (15) $4\frac{1}{2}$ | (15) $1\frac{1}{3}$ | (15) 2 | (15) $\frac{3}{8}$ |

E191-200 (3-5 min)

| 191 | 192 | 193 | 194 | 195 |
|-----------------------|-----------------------|----------------------|---------------------|-----------------------|
| (1) $\frac{11}{12}$ | (1) $\frac{1}{8}$ | (1) $\frac{2}{9}$ | (1) $\frac{2}{9}$ | (1) $3\frac{1}{3}$ |
| (2) $\frac{19}{24}$ | (2) $1\frac{3}{8}$ | (2) $\frac{3}{4}$ | (2) $1\frac{3}{5}$ | (2) $\frac{7}{20}$ |
| (3) $\frac{7}{18}$ | (3) $2\frac{3}{10}$ | (3) $1\frac{4}{5}$ | (3) 4 | (3) $1\frac{11}{24}$ |
| (4) $\frac{1}{2}$ | (4) $1\frac{1}{4}$ | (4) $2\frac{1}{3}$ | (4) 3 | (4) $2\frac{23}{28}$ |
| (5) $\frac{7}{15}$ | (5) $2\frac{4}{7}$ | (5) $4\frac{1}{2}$ | (5) $\frac{2}{9}$ | (5) $3\frac{5}{6}$ |
| (6) $\frac{11}{12}$ | (6) $2\frac{8}{9}$ | (6) $1\frac{3}{4}$ | (6) $2\frac{3}{5}$ | (6) $3\frac{5}{18}$ |
| (7) $\frac{5}{6}$ | (7) $3\frac{1}{3}$ | (7) $3\frac{1}{2}$ | (7) 99 | (7) $4\frac{1}{21}$ |
| 191 | 192 | 193 | 194 | 195 |
| (8) $3\frac{5}{6}$ | (8) $\frac{5}{9}$ | (8) $\frac{2}{3}$ | (8) $3\frac{1}{3}$ | (8) $1\frac{3}{4}$ |
| (9) $3\frac{7}{8}$ | (9) $1\frac{7}{10}$ | (9) $\frac{10}{27}$ | (9) $\frac{5}{8}$ | (9) $\frac{7}{12}$ |
| (10) $3\frac{19}{24}$ | (10) $3\frac{5}{12}$ | (10) $10\frac{1}{2}$ | (10) 3 | (10) $1\frac{9}{14}$ |
| (11) $4\frac{1}{9}$ | (11) $3\frac{1}{4}$ | (11) $\frac{5}{6}$ | (11) $1\frac{3}{7}$ | (11) $3\frac{2}{3}$ |
| (12) $7\frac{1}{10}$ | (12) $2\frac{13}{21}$ | (12) 6 | (12) $1\frac{1}{7}$ | (12) $1\frac{17}{18}$ |
| (13) $4\frac{1}{24}$ | (13) $1\frac{11}{16}$ | (13) $5\frac{1}{4}$ | (13) $\frac{8}{13}$ | (13) $4\frac{8}{15}$ |
| (14) $7\frac{7}{18}$ | (14) $1\frac{1}{3}$ | (14) 6 | (14) $\frac{3}{14}$ | (14) $4\frac{13}{40}$ |
| (15) $7\frac{8}{21}$ | (15) $1\frac{12}{35}$ | (15) 14 | (15) $\frac{4}{21}$ | (15) $5\frac{13}{80}$ |

| 196 | 197 | 198 | 199 | 200 |
|----------------------|----------------------|-----------------------|----------------------|-----------------------|
| (1) $\frac{4}{5}$ | (1) $1\frac{13}{18}$ | (1) $5\frac{7}{20}$ | (1) $1\frac{29}{30}$ | (1) $6\frac{1}{8}$ |
| (2) 4 | (2) $4\frac{5}{12}$ | (2) $3\frac{1}{6}$ | (2) $4\frac{11}{12}$ | (2) $3\frac{4}{9}$ |
| (3) 6 | (3) $4\frac{3}{14}$ | (3) $3\frac{4}{15}$ | (3) $\frac{11}{20}$ | (3) $1\frac{13}{20}$ |
| (4) $1\frac{3}{7}$ | (4) $5\frac{17}{30}$ | (4) $1\frac{3}{10}$ | (4) $\frac{7}{12}$ | (4) $\frac{4}{9}$ |
| (5) $3\frac{1}{3}$ | (5) $1\frac{5}{18}$ | (5) $2\frac{9}{50}$ | (5) 22 | (5) 9 |
| (6) 5 | (6) $2\frac{3}{4}$ | (6) $1\frac{1}{12}$ | (6) $2\frac{1}{2}$ | (6) $\frac{7}{32}$ |
| (7) $6\frac{1}{2}$ | (7) $2\frac{4}{15}$ | (7) $1\frac{3}{10}$ | (7) $\frac{3}{4}$ | (7) 10 |
| 196 | 197 | 198 | 199 | 200 |
| (8) $1\frac{4}{5}$ | (8) $\frac{3}{5}$ | (8) 7 | (8) $8\frac{7}{9}$ | (8) $5\frac{41}{50}$ |
| (9) $\frac{5}{14}$ | (9) $\frac{1}{6}$ | (9) 15 | (9) $7\frac{11}{72}$ | (9) $6\frac{7}{90}$ |
| (10) $\frac{15}{16}$ | (10) $1\frac{1}{2}$ | (10) 1 | (10) $2\frac{4}{9}$ | (10) $4\frac{5}{11}$ |
| (11) $\frac{2}{7}$ | (11) 5 | (11) $3\frac{11}{15}$ | (11) $\frac{31}{60}$ | (11) $1\frac{71}{75}$ |
| (12) $\frac{5}{11}$ | (12) $2\frac{2}{3}$ | (12) 4 | (12) 15 | (12) 32 |
| (13) $\frac{9}{10}$ | (13) $\frac{4}{5}$ | (13) $4\frac{2}{3}$ | (13) 4 | (13) 2 |
| (14) $3\frac{1}{2}$ | (14) $\frac{1}{2}$ | (14) 10 | (14) $\frac{5}{9}$ | (14) $1\frac{1}{8}$ |
| (15) $\frac{3}{8}$ | (15) $\frac{3}{10}$ | (15) $2\frac{2}{5}$ | (15) $\frac{1}{5}$ | (15) 100 |